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LOWER GUADALUPE RIVER
SANTA CLARA COUNTY, CALIFORNIA
IDENTIFICATION OF WATERS OF THE U. S.

Prepared by

H. T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

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Prepared by

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24 November 1997 (revised 23 March 1998)

Project No. 1130-01

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TABLE OF CONTENTS

TABLE OF CONTENTS.....i

EXECUTIVE SUMMARY.....1

INTRODUCTION.....2

SURVEY METHODS.....9

SURVEY RESULTS.....12

LITERATURE CITED.....17

APPENDICES

Appendix A. Plant List.....18
Appendix B. Soils List.....21
Appendix C. Data Forms.....46
Appendix D. Photographs.....96

FIGURES

Figure 1. Site/Vicinity Map.....3
Figure 2. USGS Map.....4
Figure 3. Soils Map.....5
Figure 4. NWI Map.....6
Figure 5. Historic Waters Map.....7
Figure 6. Jurisdictional Waters Map.....oversized

TABLES

Table 1. Wetland Indicator Status.....10
Table 2. Section 404 data.....14
Table 3. Section 10 data.....16

INTRODUCTION

PROJECT AREA DESCRIPTION

The lower Guadalupe River is located in an incorporated area of the city of San Jose, Santa Clara County (Figure 1). This major waterway of the Santa Clara Valley is fed by numerous creeks including: Guadalupe Creek, Los Gatos Creek, Canoas Creek and Alamitos Creek. This linear project site extends along the river from the Alviso Marina to approximately 5 miles upstream to U. S. Highway 101. The project site is located on the U. S. Geological Survey (USGS) Quadrangle Map, Milpitas, California (Township 5, south; Range 1, west and Township 6, south; Range 1, west; Figure 2).

Elevations of the project area range from approximately 5 feet National Geodetic Vertical Datum (NGVD) at the confluence of the Guadalupe River and Alviso Slough to 30 feet NGVD near the U. S. Highway 101 overpass.

The average annual rainfall for this portion of the Santa Clara Valley is approximately 15 inches per year. The majority of this rainfall occurs between the months of October and April. Mean annual air temperature is approximately 58^{0} (Soil Conservation Service; SCS 1968).

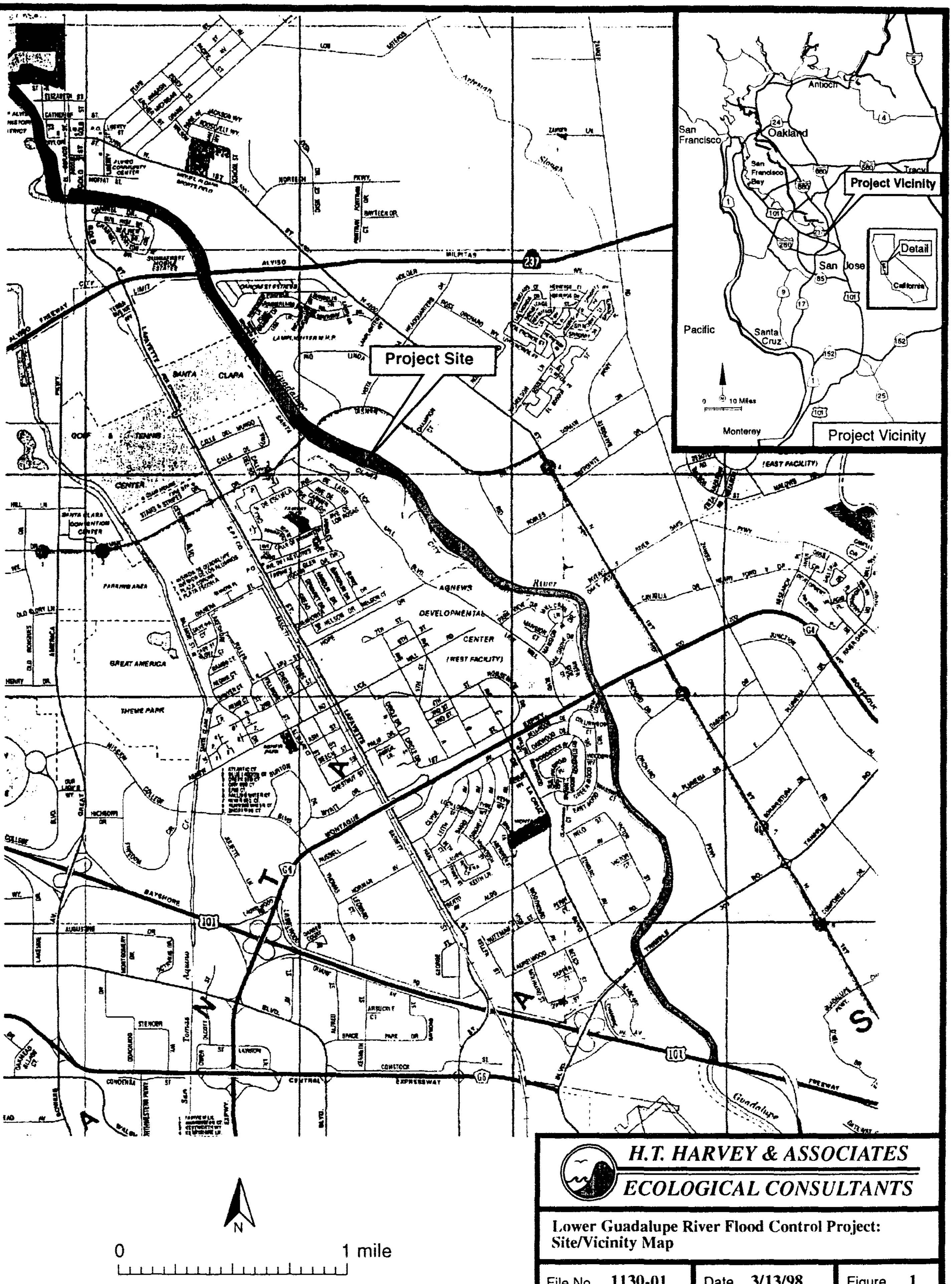
Five soil phases and three miscellaneous land types occur along the linear project site. Figure 3 shows the extent and distribution of the five soil phases which include: Campbell silty clay loam, clay substratum; Cropley clay loam (0-2% slopes); Mocho loam; Pacheco loams, clay substratum; and, Willows clay, slightly alkali (SCS 1968). The Campbell series consists of somewhat poorly-drained, moderately fine-textured soils underlain by mixed, sedimentary alluvium. The Cropley series includes well-drained, fine-textured soils underlain by mixed sedimentary alluvium. The Mocho series consists of moderately well-drained, medium to moderately fine textured soils, underlain by sedimentary alluvium. The Pacheco series includes poorly-drained, medium-textured soils, underlain by sedimentary alluvium. The Willows series consists of fine-textured, poorly-drained soils underlain by sedimentary alluvium. Figure 3 also shows three miscellaneous land types include: tidal marsh, made land and pits (SCS 1968). Tidal Marsh consists of land that is periodically covered by ocean water. Made land consists of variable textured soil material and refuse over Alviso soils on tidal marsh land. Fill material can vary from 4 to 20 feet thick. Pits includes excavated substratum from the Yolo and Soper soil series. The Pacheco, Cropley, Campbell, Willows and Tidal Marsh soil types are all listed as hydric soils or as soils that contain a hydric soil component (SCS 1992).

The entire length of the project area contains sites that have been classified according to the U. S. Fish and Wildlife Service's Wetland Classification System (National Wetland Inventory Map; Figure 4). These sites are designated as estuarine, intertidal, emergent, regularly flooded (E2EMN), estuarine, subtidal, unconsolidated bottom, subtidal (E1UBL), palustrine, emergent, seasonally flooded (PEMC) and palustrine, scrub/shrub, seasonally flooded (PSSC).

The bed and banks of the Guadalupe River have been greatly modified during the last century for flood control and development purposes. The lowest reach of the river (Guadalupe Slough) has been disconnected from the upper reach by the development of salt evaporator ponds. The Guadalupe River was then directed into Alviso Slough, located to the northeast of the historical outflow point of the river (now called Guadalupe Slough). The area where the river flows into Alviso slough is located on land that was historically tidal salt marsh (Figure 5). This entire segment of the river has been channelized and occurs within flood control levees constructed in the mid-1960's. Several reaches within the current study area include high-flow by pass channels constructed to convey flood events during the rainfall season.

PROJECT DESCRIPTION

The Santa Clara Valley Water District (District) is planning to initiate flood control improvements along the lower Guadalupe River in the near future. The nature and scope of these improvements was not known at the time the jurisdictional delineation was conducted. The project boundaries, for the purposes of this study, include all areas that may potentially be affected by the project.



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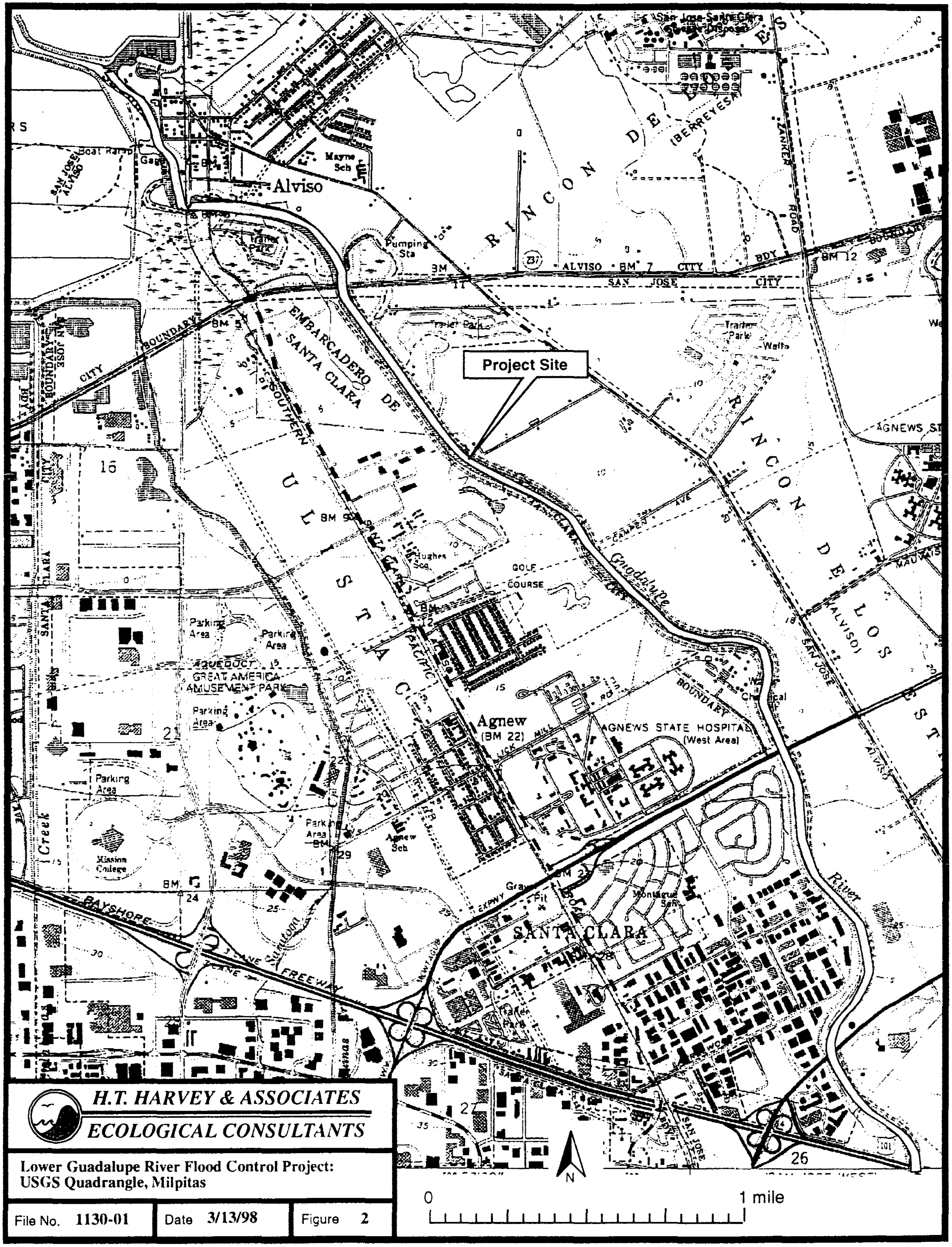
Lower Guadalupe River Flood Control Project: Site/Vicinity Map

File No. **1130-01**	Date **3/13/98**	Figure **1**



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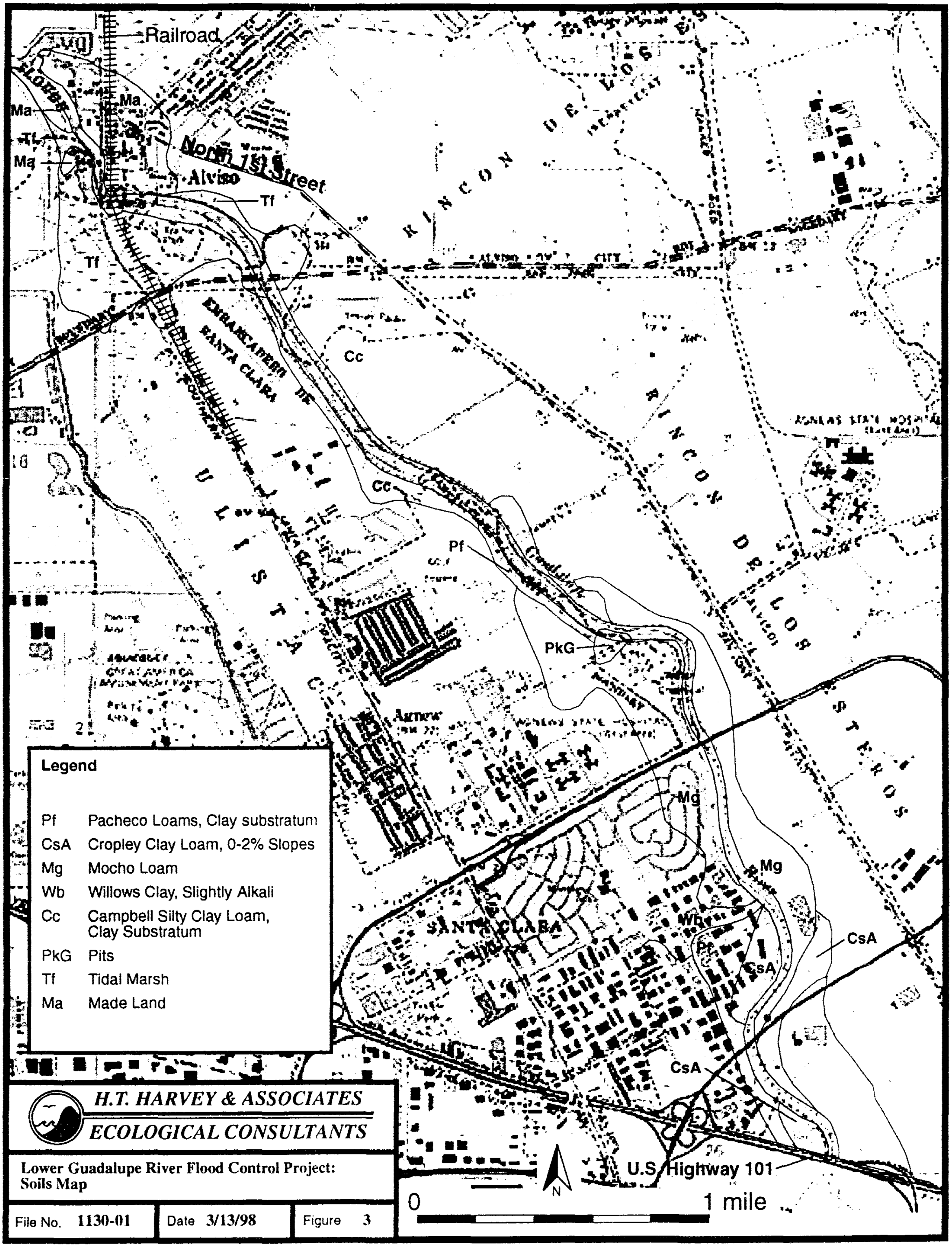
Lower Guadalupe River Flood Control Project:
USGS Quadrangle, Milpitas

File No. 1130-01	Date 3/13/98	Figure 2



Legend

Pf	Pacheco Loams, Clay substratum
CsA	Cropley Clay Loam, 0-2% Slopes
Mg	Mocho Loam
Wb	Willows Clay, Slightly Alkali
Cc	Campbell Silty Clay Loam, Clay Substratum
PkG	Pits
Tf	Tidal Marsh
Ma	Made Land

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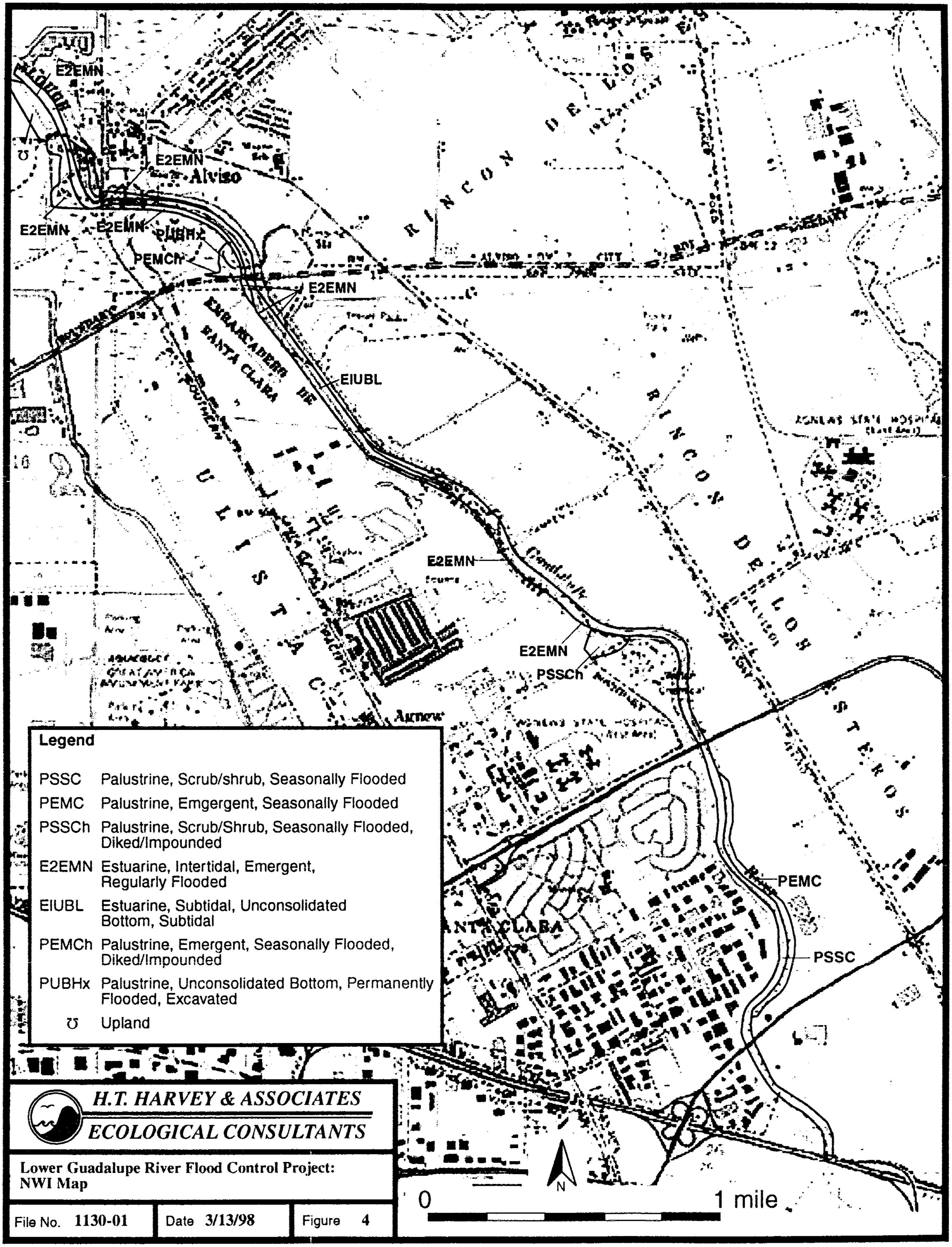
Lower Guadalupe River Flood Control Project: Soils Map

File No. 1130-01 | Date 3/13/98 | Figure 3



Legend

PSSC	Palustrine, Scrub/shrub, Seasonally Flooded
PEMC	Palustrine, Emgergent, Seasonally Flooded
PSSCh	Palustrine, Scrub/Shrub, Seasonally Flooded, Diked/Impounded
E2EMN	Estuarine, Intertidal, Emergent, Regularly Flooded
EIUBL	Estuarine, Subtidal, Unconsolidated Bottom, Subtidal
PEMCh	Palustrine, Emergent, Seasonally Flooded, Diked/Impounded
PUBHx	Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
℧	Upland

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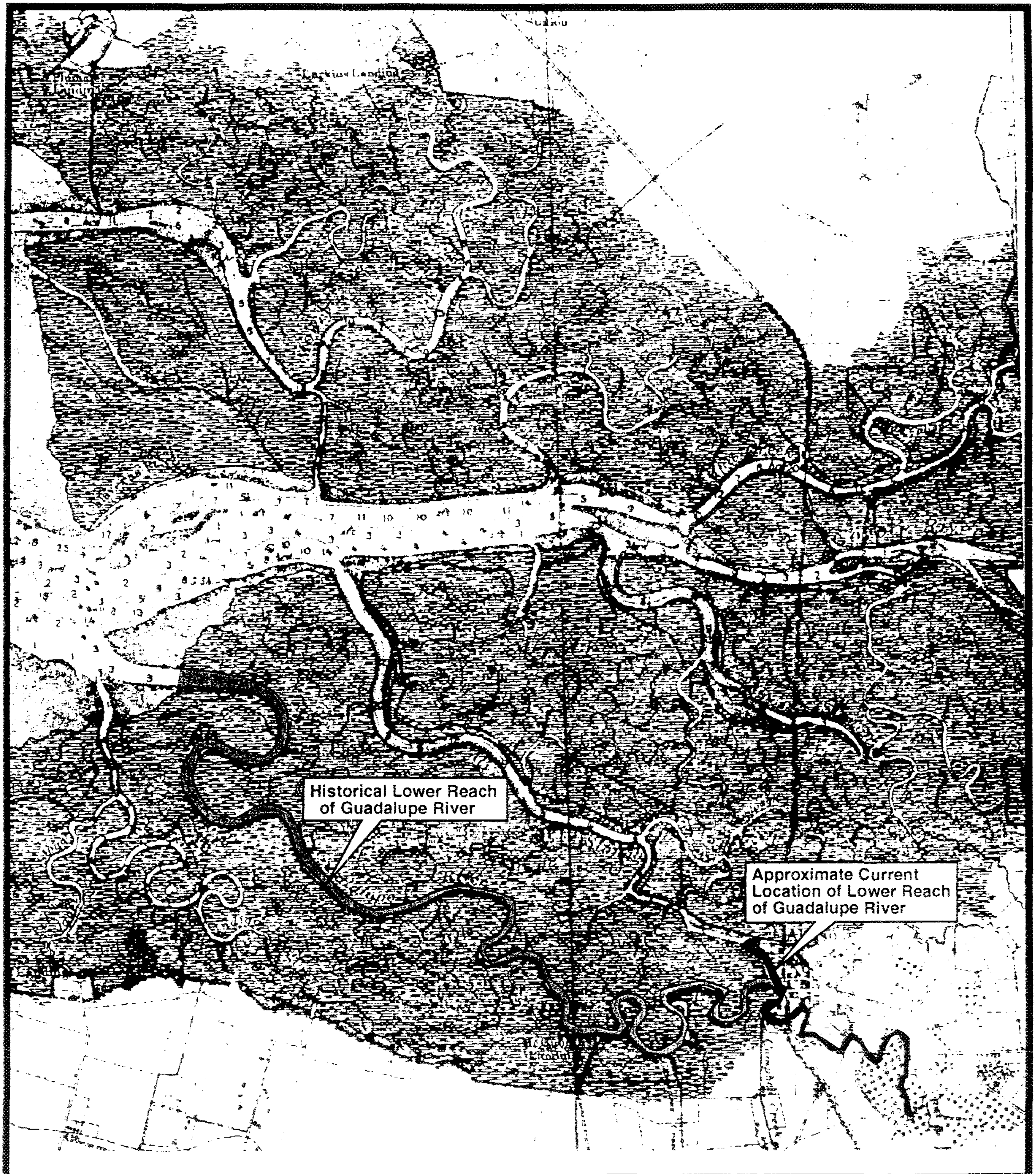
Lower Guadalupe River Flood Control Project: NWI Map

File No. 1130-01 | Date 3/13/98 | Figure 4


Larkins Landing
Historical Lower Reach of Guadalupe River
Approximate Current Location of Lower Reach of Guadalupe River
N
0
9,534 feet

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Lower Guadalupe River Flood Control Project: Historic Waters
(Based on the U.S. Coast and Geodedic Survey Map 1903)

File No. 1130-01	Date 3/13/98	Figure 5

SURVEY PURPOSE

H. T. Harvey & Associates biologists surveyed the lower portion of the Guadalupe River in the winter of 1996-97, and spring and summer of 1997 for areas which meet the regulatory definition of waters of the United States (jurisdictional waters). Development in areas identified as jurisdictional waters is subject to the permit requirements of the U.S. Army Corps of Engineers (USACE), under Section 10 of the Rivers and Harbors Act (1899) and Section 404 of the Clean Water Act (1972). The purpose of the surveys was to describe the extent and distribution of jurisdictional waters, provide maps and create this supporting document.

SURVEY METHODS

IDENTIFICATION OF JURISDICTIONAL WATERS

Field surveys were conducted between November 1996 and May 1997 for jurisdictional waters along the lower reach of the Guadalupe River. These studies were conducted at a level of effort sufficient for review by the U.S. Army Corps of Engineers. Topographic maps and aerial photographs of the study area were obtained from several sources and were reviewed prior to field surveys. These sources included U.S. Geological Survey Quadrangle maps of the area surrounding the project site, aerial photographs contained in *Soil Surveys of Santa Clara County* (SCS 1968), U.S. Fish and Wildlife Service *National Wetland Inventory Map* and relatively recent aerial photographs of the study area. Topographic profile data at 30 meter intervals along the entire project length was also obtained from the District. Information obtained in the field was drawn directly onto a blue line copy of an 1996 aerial photograph of the study site (1 in.: 750 ft.).

Below we provide a detailed description of the methodology used in the identification of three different classes of jurisdictional waters, having the potential of occurring on site, including: A) Section 404 jurisdictional wetlands (routine and man-induced); B) Section 404 other waters, and; C) current Section 10 waters.

A) IDENTIFICATION OF SECTION 404: JURISDICTIONAL WETLANDS

Surveys were conducted within the project boundaries for areas which meet the technical criteria of jurisdictional wetlands along the banks of the Guadalupe River. The vegetation, soils, and hydrology of the site were examined following the guidelines outlined in the "Routine Determination Method" in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

The property was examined for topographic features, drainages, alterations to site hydrology and areas of significant recent disturbance by hiking the entire site. A determination was then made as to whether normal environmental conditions were present at the time of the field surveys. Data were used to document which portions of the site were wetlands.

Vegetation. Plants observed at each of the sample sites were identified to species using standard floras appropriate for central California, wherever necessary. Such floras included *A California Flora and Supplement* (Munz and Keck 1973), *A Flora of the Marshes of California* (Mason 1969), *Manual of the Grasses of the United States* (Hitchcock 1971), and *Weeds of California* (Robbins, et al. 1970). The wetland indicator status of each species was obtained from the 1987 Wetland Plant List, California (Reed 1988). The names of plants were generally not taken from *The Jepson Manual* (Hickman 1993) as these names are not totally consistent with scientific names used in the *1988 Wetland Plant List, California* (Reed 1988) and the *National List of Scientific Plant Names* (Smithsonian Inst. 1982). A list of species for each observation area was then compiled and an assessment of the dominant species made (Appendix A). It was then determined which of the observation areas supported wetland vegetation.

Wetland indicator species are so designated according to their frequency of occurrence in wetlands. For instance, a species with a presumed frequency of occurrence of 67% to 99% in wetlands is designated a facultative wetland indicator species. The wetland indicator groups, indicator symbol and the frequency of occurrence of species within them in wetlands are shown in Table 1.

Table 1. Wetland Indicator Status Categories for Vascular Plants*

INDICATOR CATEGORY	SYMBOL	FREQUENCY OF OCCURRENCE
OBLIGATE	OBL	greater than 99%
FACULTATIVE WETLAND	FACW	67 - 99%
FACULTATIVE	FAC	34 - 66%
FACULTATIVE UPLAND	FACU	1 - 33%
UPLAND	UPL	less than 1%

* Based upon information contained in *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

Obligate and facultative wetland indicator species are hydrophytes that occur "in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicator species when found growing in hydric soils that experience periodic saturation. A complete list of the vascular plants of the project site, and their current indicator status has been provided in Appendix A.

Soils. Where possible, the top 22 inches of the soil profile was examined for hydric characteristics. Such characteristics include the presence of organic soils (Histisols), histic epipedons, aquic or peraquic moisture regime, presence of soil on hydric soil list, mottling indicated by the presence of gleyed or bright spots of colors (in the former case, blue grays; in the latter case, orange red, or red brown) within the soil horizons observed. Mottling of soils usually indicates poor aeration and lack of good drainage. Munsell Soil Notations (Munsell Soil Color Charts, Kollmorgen Instr. Corp. 1990) were recorded for the soil matrix for each soil sample. The last digit of the Munsell Soil Notation refers to the chroma of the sample. This notation consists of numbers beginning with 0 for neutral grays and increasing at equal intervals to a maximum of about 20. Chroma values of the soil matrix which are one (1) or less, or of two (2) or less when mottling is present, are typical of soils which have developed under anaerobic conditions.

In sandy soils, such as alluvial deposits in the bottom of drainage channels, hydric soil indicators include high organic matter content in the surface horizon and streaking of subsurface horizons by organic matter. All soil colors indicated in this report were taken under clear, sunny skies using moistened soil samples.

The soil survey, *Soil Survey of Santa Clara County, California* (Soil Conservation Service 1968) was consulted in order to determine which soil types have been mapped on the project site. Descriptions of soil mapping units and the list of hydric soils in Santa Clara County are included in Appendix B.

Hydrology. Each of the sample sites was examined for positive field indicators of wetland hydrology. Such indicators might include visual observation of inundation and/or soil saturation, water marks, drift lines, water-borne sediment deposits, water-stained leaves, and drainage patterns within wetlands.

B) IDENTIFICATION OF SECTION 404: OTHER WATERS

"Other waters" include lakes, seasonal ponds, seasonal springs and tributary waters. Such areas are identified by the presence of standing or running water and generally lack hydrophytic vegetation. The project site was surveyed for areas meeting the regulatory definition of "other waters."

Tributary waters and their impoundments are under the regulatory jurisdiction of the USACE and extend to the ordinary high water (OHW) mark on opposing channel banks in non-tidal areas and to the high tide line (HTL) in tidal areas. The OHW mark is typically indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in character of soil, destruction of vegetation, exposed roots on the bank, deposition of leaf litter and other debris materials or lower limit of moss growth on channel banks.

C) IDENTIFICATION OF CURRENT SECTION 10 WATERS

Section 10-jurisdiction generally extends to the maximum lateral extent of the mean high water mark (MHW) on opposing banks of tidal waterways. Throughout the entire project area, the identification of the Mean High Tide mark was determined from observation of field characteristics including vegetation and lateral extent of the river's water surface as described below.

The location of the MHW mark was observed by noting the type and distribution of vegetation within the bed, bank and channel of the river. Specific vegetation types corresponding to the MHW mark were mapped and identified throughout all reaches. The particular species of plants or plant associations used to located the MHW mark, however, changed from downstream to upstream as the relative salinity and duration of tidal influence varied. Overall, plant species were more or less confined to a low bench adjacent to the river channel. The Mean High Tide mark extended to the upper reach of this lower bench.

The location of the MHW mark was further determined from direct observation of the lateral extent of the river at various locations throughout the project area at a time, taken from published tide logs, when the river was at the MHW mark elevation. Each of the reaches was observed several times during different tidal events. The elevation of MHW was taken from information supplied by District and from direct measurements at various locations throughout the project area. The location of the MHW mark was further verified by observing the elevation of water in the river and its lateral extent within the confines of the river levees during several other tidal events (higher high, lower low, etc.).

The furthest upstream location of tidal influence (i.e. that point on the river where MHW gives way to the ordinary high water mark) was determined by direct observation of river surface elevations at several locations along the river during tidal events. In addition, the MHW mark elevation in each reach was compared with the bottom surface elevation of the river at 50 meter intervals from information supplied by the District. This point was determined to be at approximately the crossing of the Hetch Hetchy pipeline and was further verified by a break in vegetation type. Please note that the precise location of this break point varies from year to year and depends upon the position of the MHW mark in the 19.6-year tidal epoch, bottom elevation of the river, and discharge volumes from the river. Prior to field surveys this approach and interpretation of field characteristics used in the determination of the MHW mark was verified during a field visit with Mr. Dan Martel of the San Francisco Branch of the USACE (415.977.8435).

SURVEY RESULTS

Information pertinent to the identification of jurisdictional waters assembled during the investigations are presented in four appendices attached to the rear of this report and include:

- Appendix A--Plant List
- Appendix B--Soils Descriptions
- Appendix C--USACE Data Forms
- Appendix D--Color Photographs

OBSERVATIONS/RATIONALE/ASSUMPTIONS

REACH 0: Downstream of the Southern Pacific Railroad (SPRR) Bridge:

♦ The river is a single channel that is strongly affected by the tide; alkali bulrush dominates the landward, higher elevation portions of the river plain (Photograph #1; Appendix D) while California bulrush and narrow-leaved cattail occur on the lower benches adjacent to the channel (Photograph #2; Appendix D). The location of the MHW mark within this reach was largely dependent upon the location of the California Bulrush and narrow-leaved cattail.

REACH 1: Tasman Drive to SPRR:

♦ River remains a single channel that continues to be affected by the tides; alkali bulrush is much less prevalent. California bulrush and narrow-leaved cattail are the dominant species within the river basin (Photograph #3; Appendix D).

REACH 2: Montague Expressway to Tasman Drive:

♦ Single channel becomes braided upstream. California bulrush and cattail continue to dominate as streamside vegetation. Riparian trees such as Fremont's cottonwood and box elder are established along upper banks of river at the upstream end (Photograph #4; Appendix D).

REACH 3: Trimble Road to Montague Expressway:

♦ The river is continuously braided; main channel is located along the western portion of the basin and a constructed overflow channel is situated along the eastern portion.

♦ The overflow channel was constructed by the Santa Clara Valley Water District in 1988 in order to manage seasonal high flows. This channel is periodically cleared of vegetation as part of an ongoing maintenance schedule; vegetation was last removed in 1992 (pers. comm. Gale Rankin, botanist, Santa Clara Valley Water District, 5750 Almaden Expressway, San Jose, CA 95118).

♦ Some of the hydrophytic vegetation within the overflow channel is supported by either the water table or ordinary high flows. These areas are considered to be jurisdictional. Conversely, areas within the overflow channel that support hydrophytic vegetation beyond the influence of the water table or ordinary high flows are not considered to be jurisdictional.

♦ The daily effect of the tides is not significant within this portion of the river. Herbaceous, wetland vegetation is less prominent than along downstream portions of the river.

- Riparian trees are much more extensive along the banks and upon channel islands. Dominant species include Fremont cottonwood, California box elder and red willow (Photograph #5; Appendix D).

REACH 4: U.S. Highway 101 to Trimble Road:

- Wetland areas established on fine-textured river deposits.
- Riparian trees scattered along banks; dominated by Fremont cottonwood

AREAS MEETING THE REGULATORY DEFINITION OF JURISDICTIONAL WATERS

Areas of the project site potentially subject to provisions of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act are described below in the following sections. The extent and distribution of Section 404 jurisdictional waters are presented on Section 404 Sheets 1 through 18 (oversize). Section 10 waters are shown on Section 10 Sheets 1 through 9 (oversize).

The remaining areas of the site met none of the regulatory definitions of jurisdictional waters under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act.

A) IDENTIFICATION OF SECTION 404- Jurisdictional Wetlands

Jurisdictional wetlands located within the project area are shown on Section 404 Sheets 1-18 (oversize). The total size of these wetlands per Reach included: Reach 0--20.8 acres; Reach 1--35.8 acres; Reach 2--18.7 acres; Reach 3--7.2 acres, and; Reach 4--2.9 acres. Field characteristics of hydrophytic vegetation, hydric soils and wetland hydrology were obtained at sample location numbers as presented in Table 2. Data forms are presented in Appendix C.

Table 2. Sample points per Reach within the project area of the Guadalupe River used in the determination of Section 404 wetlands and other waters (refer to Section 404 Sheets 1 through 18).

REACH NUMBER	SECTION 404 Sheet Number	WETLAND Sample Points	OTHER WATERS Sample Points	UPLAND Sample Points
0	1			
0	2	5A		5B
0/1	3			
1	4	1B and 4B	1C and 4C	1A and 4A
1	5	2B and 3B	2C and 3C	2A and 3A
1	6			
1	7			
1/2	8	6B and 7B	6C and 7C	6A and 7A
2	9	11B		11A
2	10	8B, 8D, 9B and 9D		8A, 8C, 9A and 9C
2	11	10B		10A
2/3	12	12B		12A and 12C
3	13	13B		13A and 13C
3	14	14B		14A and 14C
3	15			
3/4	16			
4	17	15B, 15D, 16B and 16D		15A, 15C, 16A and 16C
4	18	17B		17A

Hydrophytic vegetation observed within wetlands included perennial peppergrass (*Lepidium latifolium*; FACW), alkali bulrush (*Scirpus robustus*; OBL), California bulrush (*Scirpus californicus*; OBL), narrow-leaved cattail (*Typha angustifolia*; OBL), common knotweed (*Polygonum arenastrum*; FAC), curly dock (*Rumex crispus*; FACW-), rice cutgrass (*Leersia oryzoides*; OBL), Canada horseweed (*Conyza canadensis*; FAC), giant bur-reed (*Sparganium eurycarpum*; OBL), tule (*Scirpus acutus* var.*occidentalis*;OBL), common cocklebur (*Xanthium strumarium*; FAC+), dallis grass (*Paspalum dilatatum*; FAC) and Italian ryegrass (*Lolium multiflorum*; FAC).

Hydric soil characteristics included soils of low chroma (2.5Y 4/2; dark grayish brown, 10 YR 3/2; very dark, grayish brown, 10 YR 3/1; very dark gray), presence of mottles (10 YR 4/4; dark, yellowish brown, 10 YR 4/6; dark, yellowish brown, 10 YR 3/6; dark, yellowish brown, 7.5 YR 3/4; dark brown, 7.5YR 4/4; brown), gleyed conditions (4/10 G; dark bluish gray, 4/10Y; dark, greenish gray, 3/10Y; dark greenish gray, 3/N; very dark grey), peraquic moisture regime and high organic matter content in sandy soils.

Hydrologic characteristics included saturated surface soils, drainage patterns in wetlands, water marks, sediment deposits, shallow water table (<12 inches), saturation in upper 12 inches, inundation, and water-stained leaves.

B) IDENTIFICATION OF SECTION 404-Other Waters

Other waters located within the project area are shown on Section 404 Sheets 1-18 (oversize). These areas occurred within the deep water habitat of the main channel; therefore, no emergent vegetation existed. The total size of other waters per Reach included: Reach 0--6.98 acres; Reach 1--7.46 acres; Reach 2--4.48 acres; Reach 3--8.81 acres, and; Reach 4--2.88 acres. Sample location numbers per Reach are presented in Table 2.

C) IDENTIFICATION OF CURRENT SECTION 10 WATERS

The historical bay marshes which underlie a portion of the project area were diked and drained well before the construction of the levees associated with channelization of the Guadalupe River in the mid-1960's. Figure 5 shows the pre-1960's alignment of the Guadalupe River including areas identified as historical and current alignments of the river.

Areas of the project site potentially subject to provisions of Section 10 of the Rivers and Harbors Act (1899) located within the project area are shown on Section 10 Sheets 1-9 (oversize). Table 3 presents the Sheet Number and Reach Number used in the determination of Section 10 jurisdictional waters.

Table 3. Reach and Sheet Number within the project area of the Guadalupe River used in the determination of Section 10 Waters (refer to Section 10 Sheets 1 through 9).

REACH NUMBER	SECTION 10 Sheet Number
0	1
0	2
0/1	3
1	4
1	5
1	6
1	7
1/2	8
2	9

D) IDENTIFICATION OF UPLAND HABITATS

The majority of the study site did not contain hydrophytic vegetation, hydric soils nor wetland hydrology. Field data was collected at sample locations 1A, 2A, 3A, 4A, 5B, 6A, 6C, 7A, 7C, 8A, 8C, 9A, 9C, 10A, 11A, 12A, 12C, 13A, 13C, 14A, 14C, 15A, 15C, 16A, 16C and 17A (Section 404 Sheets 1-18; oversize).

Vegetation of the upland sites was characterized by a mixture of upland and facultative species. Species observed included: ripgut brome (*Bromus diandrus*; UPL), coyote brush (*Baccharis pilularis*; UPL), wild oats (*Avena fatua*; UPL), smilo grass (*Oryzopsis miliacea*; UPL), barley (*Hordeum leporinum*; NI), rattail fescue (*Vulpia myuros*; FACU), wild radish (*Raphanus sativus*; UPL), Italian thistle (*Carduus pycnocephalus*; UPL), black mustard (*Brassica nigra*; UPL), sweet fennel (*Foeniculum vulgare*; FACU), aster (*Aster chilensis*; FAC), bristly ox-tongue (*Picris echioides*; FAC), Italian ryegrass (*Lolium multiflorum*; FAC) and sweet clover (*Melilotus indica*; FAC).

The majority of the soils sampled within these upland sites did not exhibit reduced conditions. These soils had high chroma values (10 YR 3/2; very, dark grayish brown, 10YR 3/3; dark brown, 10 YR 4/2; dark grayish brown and 10 YR 4/3; brown,). A small percentage did have low chroma values (10 YR 3/1; very dark gray, 10 YR 4/1 and dark gray); these areas were located on the lower slopes of the channel levees which are comprised of a mixture of soils of varying textures and colors. Some of these upland sites exhibited hydrologic features such as sediment deposits due to the above average seasonal flows for the winter of 1996-1997.

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APPENDIX A

PLANTS OF THE LOWER GUADALUPE RIVER PROJECT SITE

Appendix A. Vascular plants observed at the Lower Guadalupe River Project Site, Santa Clara County, California.

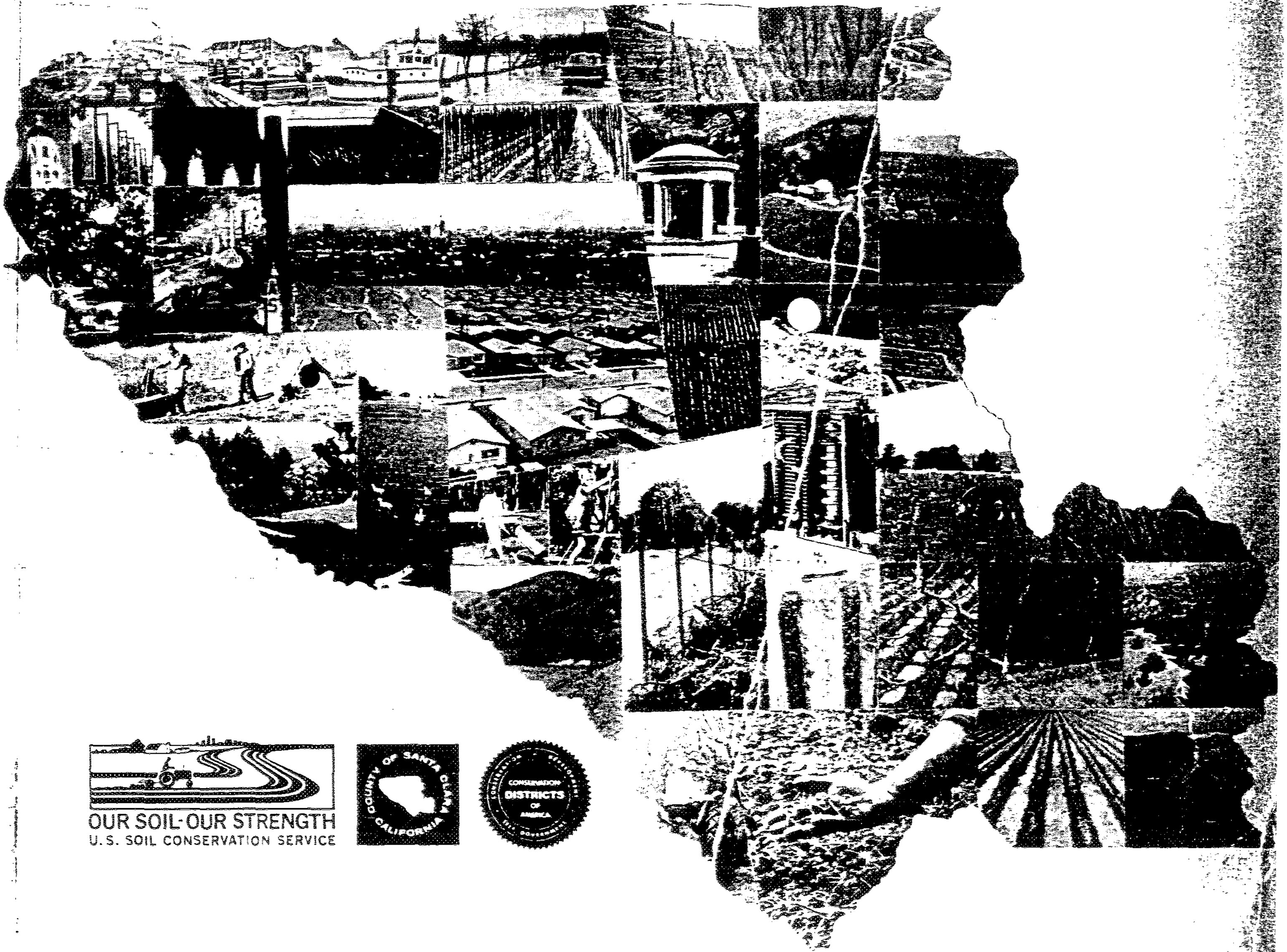
FAMILY NAME	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS
Aceraceae	*Acer negundo*	box elder	FACW
Apiaceae	*Conium maculatum*	poison hemlock	FACW
	Foeniculum vulgare	sweet fennel	FACU
Asteraceae	*Artemisia douglasiana*	mugwort	FACW
	Aster chilensis	common California aster	FAC
	Baccharis pilularis	coyote brush	UPL
	Baccharis salicifolia	mulefat	FACW
	Bidens sp.	beggarticks	
	Carduus pycnocephalus	Italian thistle	UPL
	Cirsium vulgare	bull thistle	UPL
	Conyza canadensis	Canada horseweed	UPL
	Euthamia occidentalis	western goldenrod	OBL
	Senecio vulgaris	common groundsel	NI
	Picris echioides	prickly ox-tongue	FAC
	Xanthium strumarium	cocklebur	FAC+
Brassicaceae	*Brassica nigra*	black mustard	UPL
	Lepidium latifolium	perennial peppergrass	FACW
	Raphanus sativus	wild radish	UPL
	Rorippa nasturtium-aquaticum	watercress	OBL
Caprifoliaceae	*Sambucus mexicana*	blue elderberry	FAC
Cyperaceae	*Carex* sp.	sedge	
	Cyperus eragrostis	tall umbrella sedge	FACW
	Scirpus acutus var. *occidentalis*	hardstem bulrush	OBL
	Scirpus californicus	California bulrush	OBL
	Scirpus robustus	alkali bulrush	OBL
Dipsaceae	*Dipsacus sativus*	fuller's teasel	UPL
Elaeagnaceae	*Elaeagnus angustifolius*	Russian olive	FAC
Equisetaceae	*Equisetum* sp.	horsetail	>FAC
Euphorbiaceae	*Ricinis communis*	castor bean	FACU
Fabaceae	*Melilotus* alba	white sweetclover	FAC
Geraniaceae	*Erodium botrys*	broad-leaf filaree	
	Erodium cicutarium	cut-leaf filaree	
	Geranium molle	soft geranium	UPL
Juglandaceae	*Juglans californica* var. *hindsii*	black walnut	FAC
	Juglans regia	English walnut	UPL
Malvaceae	*Malva nicaeensis*	bull mallow	UPL
Onagraceae	*Epilobium ciliatum* ssp. *ciliatum*	willow herb	FACW
	Ludwigia peploides	water primrose	OBL
	Oenothera sp.	evening primrose	

APPENDIX B

SOILS OF THE
LOWER GUADALUPE RIVER
PROJECT SITE

PROPERTY OF
HARVEY & STANLEY ASSOCIATES, INC.

SOILS OF SANTA CLARA COUNTY



OUR SOIL-OUR STRENGTH
U.S. SOIL CONSERVATION SERVICE

Prepared by the United States Department of Agriculture, Soil Conservatio
Service, in cooperation with and for the County of Santa Clara Plannin
Department, the Santa Clara County Flood Control and Water District, and th
Black Mountain, Evergreen, and Loma Prieta Soil Conservation Districts

nonplastic; few fine and coarse, abundant medium roots; many very fine interstitial and fine tubular few medium and coarse tubular pores; few thin clay films on ped faces and in pores; strongly acid (pH 5.5); clear wavy boundary. (10 to 20 inches thick).

C 43 to 60 inches, very pale brown (10YR 7/4) very fine sandy loam, yellowish brown (10YR 5/4) moist; massive, soft, very friable, nonsticky and nonplastic wet; few medium roots; many very fine interstitial and fine tubular, few medium and coarse tubular pores; strongly acid (pH 5.5). This horizon is soft sandstone that is easily cut by hand tools.

Surface soil color is dark grayish brown or grayish brown, and occasionally may be dark brown. Texture is generally a fine sandy loam but may range to a coarse loam. Colors of the subsoil are dark brown to brown and the texture is about the same as the surface only slightly finer. Reaction of the surface is slightly acid, characteristically decreasing to medium acid in the subsoil to strongly acid in the substratum. Depth to soft sandstone substratum will vary from 33 to 60 inches, but will average a little over 36 inches.

Included in mapping this soil are 7 percent Felton silt loam; along drainageways and north slopes, 5 percent Los Gatos gravelly loam; and along ridge crests 3 percent Maymen rocky fine sandy loam.

This well drained soil has an average water holding capacity of about 5 to 8 inches. Natural fertility is moderate. Subsoil permeability is moderately rapid. Surface runoff is very rapid and the erosion hazard is very high. Rooting depth is deep.

The main use of this soil is for recreation, watershed, and a few areas are used for timber production. The very steep slopes create an erosion problem when the areas are logged. The soil is moderately productive, with an average site index of 120 6/. Windthrow hazard is slight and plant competition and seedling mortality is moderate. Capability unit VIIe1 (4).

CAMPBELL SERIES

The Campbell series consists of somewhat poorly drained, moderately fine textured soils underlain by mottled, stratified mixed but mostly sedimentary alluvium. They formed on low level valley bottoms and alluvial plain positions, surrounding areas of poorly drained soils. Vegetation is chiefly annual and perennial grasses and forbs. Elevations range from 130 to 300 feet. Mean annual rainfall is 16 to 20 inches; mean annual air temperature is about 58 to 60° F. The growing season is about 260 to 300 days. Yolo and Clear Lake are the principal associated soils.

The surface soil is a dark gray mildly alkaline silty clay and silty clay loam, averaging from 22 to 28 inches thickness. The subsoil is a mottled dark gray calcareous silty clay loam, ranging in thickness from 12 to 15 inches. Substratum material consists of mottled light olive brown calcareous silty clay loam alluvium.

The Campbell soils are used for irrigated row crops, sugar beets, and orchard crops.

Campbell silty clay loam (Ca). This soil is level, averaging less than 1 percent slope.

Representative profile: In the first tree row, on south side of road, in an orchard 1/2 mile west on Laguna Avenue from Southern Pacific railroad tracks in the N. W. 1/4 of the S. W. 1/4 of Sec. 35, T. 8 S., R. 2 E., Santa Clara County, California.

Ap	0 to 8 inches, dark gray (10YR 4/1) silty clay loam, very dark gray (10YR 3/1) moist; massive; hard, friable, slightly sticky and plastic; plentiful fine and very fine roots; many fine and very fine interstitial pores, few fine and very fine tubular pores; mildly alkaline (pH 7.5); abrupt smooth boundary. (6 to 8 inches thick).
A12	8 to 27 inches, dark gray (10YR 4/1) silty clay loam, very dark gray (10YR 3/1) moist; massive; hard, friable, slightly sticky and plastic; few fine and plentiful medium roots; abundant fine, very fine and a few medium tubular pores, many very fine and fine interstitial pores; mildly alkaline (pH 7.5); gradual smooth boundary. (16 to 20 inches thick).
A13	27 to 40 inches, dark gray (5Y 4/1) silty clay loam, very dark gray (5Y 3/1) moist, with common fine distinct mottles light olive brown (2.5Y 5/4) dry, olive brown (2.5Y 4/4) moist; weak medium and fine subangular blocky structure; hard, friable, slightly sticky and plastic; few very fine, fine and medium roots; many very fine, fine and a few medium tubular pores; slightly calcareous, moderately alkaline (pH 8.0); very diffuse smooth boundary. (12 to 15 inches thick).
C	40 to 68 inches, light olive brown (2.5Y 5/4) silty clay loam, olive brown (2.5Y 4/4) moist, common fine faint mottles light yellowish brown (10YR 6/4) dry, dark yellowish brown (10YR 4/4) moist, with bands of light gray (10YR 6/1 dry and gray (10YR 5/1) moist; massive; hard, friable, slightly sticky and plastic; few very fine, fine and medium roots; many very fine, fine and a few medium tubular pores; slightly calcareous, moderately alkaline.

Surface soil color is typically dark gray, but may be dark grayish brown or grayish brown. Texture is a silty clay loam or clay loam, and the reaction is mildly alkaline. Colors of the subsoil may be light olive brown, light brownish gray or grayish brown, with many fine to medium light yellowish brown and light gray mottles. Texture will average a silty clay loam but may be stratified with silty clay. Lime occurs at an average depth of 30 inches, but occasionally may be below 60 inches.

Included in mapping this soil are 10 percent Yolo silty clay loam and 5 percent Clear Lake clay.

The intermittently high watertable that existed during the development of this soil, is below the zone that will affect crops at the present time. Permeability is moderately slow and runoff is very slow. Fertility is high and the soil holds about 10 to 11 inches of water plants can use. Rooting depth is very deep.

This soil is used for irrigated row crops, sugar beets, irrigated prunes, walnuts, apricots and pears. Capability unit I-1 (14).

Campbell silty clay (Cd). Except for being a silty clay, with a few areas on the surface horizon that contain about 6 percent medium and fine gravel, this soil is similar to Campbell silty clay loam. Areas of this soil may be flooded about once in 5 years. Permeability is slow. Included in mapping are areas that are calcareous on the surface, 10 percent; and 5 percent Clear Lake clay.

This soil is used for irrigated row crops, sugar beets, prunes, walnuts, apricots and pears. Capability unit IIs5 (14).

Campbell silty clay loam, clay substratum (Cc). This soil occurs as small to moderately sized areas south of Pacheco Pass Highway, just east of Miller Slough, and may be flooded about once every 10 years. The surface soil may be silty clay loam, clay loam or silty clay. Color will range from dark gray to dark grayish brown; mottling occurs just below 18 inches. The substratum, at an average depth of 36 inches, is dark gray clay. The water table is below 60 inches, except for a few areas having a seasonal water table at 36 inches. Average water holding capacity is 6 to 9 inches. Otherwise, this soil is similar to Campbell silty clay loam. Included in mapping this soil are areas of gravelly clay loam texture, and areas where depth to very dark gray clay is only 20 inches.

This soil is used for irrigated row crops and sugar beets. Capability unit IIIw5 (14).

Campbell silty clay, muck substratum (Ce). The surface of this soil consists of silty clay, clay loam or silty clay loams

Rooting depth is very deep, but root density is limited by droughty, very gravelly subsoils and substratum.

A few of the more usable soils have been planted to irrigated prunes; it is mostly used for limited grazing. Capability unit IVs4 (14), and VIIe4 (15).

CROPLEY SERIES

The Cropley series consists of well drained,fine textured soils, underlain by mixed, mostly sedimentary alluvium. They have formed on nearly level to moderately sloping fans. Vegetation is annual and perennial grasses and forbs. Elevations range from 130 to 1,000 feet. Mean annual rainfall is 16 to 20 inches; mean annual air temperature is about 58 to 60° F. The growing season is about 260 to 300 days. Clear Lake and Pleasanton are the principal associated soils.

Surface soil is very dark gray, neutral clay or clay loam, averaging 12 to 22 inches in thickness. The subsoil is a dark gray mildly alkaline clay, averaging 15 to 30 inches in thickness. When these soils are dry, deep cracks develop in the surface and upper subsoil. The substratum material consists of dark grayish brown calcareous clay.

Cropley soils are used for irrigated row crops, orchards, dryland grain hay, pasture, housing and commercial developments.

Cropley clay, 0 to 2 percent slopes (CrA). This soil occurs on nearly level alluvial fans averaging about 1 percent slope.

Representative profile: One tenth of a mile east in a field, two tenths of a mile south of Foothill road from Tennant Avenue intersection; Santa Clara County, California.

Ap	0 to 7 inches, very dark gray (10YR 3/1) clay, black (10YR 2/1) when moist; weak medium subangular blocky and strong medium and fine granular structure; very hard, very firm, very sticky and very plastic; abundant very fine roots; many fine and very fine interstitial pores and a few medium tubular pores; neutral (pH 7.0); clear smooth boundary. (5 to 10 inches thick).
A12	7 to 14 inches, very dark gray (10YR 3/1) clay, black (10YR 2/1) when moist; strong coarse prismatic structure with few medium and fine granules; very hard, very firm, very sticky and very plastic; few very fine and a few coarse woody roots; common very fine interstitial and few fine tubular pores; neutral (pH 7.0); small numerous slickensides; gradual wavy boundary. (7 to 12 inches thick).
A13	14 to 36 inches, dark gray (10YR 4/1)clay, black and very dark gray (10YR 2/1, 3/1) moist; prismatic, very hard,

very firm, very sticky and very plastic; few fine interstitial and fine tubular pores; numerous slickensides, also pressure faces; mildly alkaline (pH 7.5); gradual wavy boundary. (15 to 30 inches thick).

Cca 36 to 60 inches, dark grayish brown (2.5Y 4/2) clay, very dark grayish brown (2.5Y 3/2) moist; massive; hard, firm, sticky and plastic; many very fine interstitial and common very fine tubular pores; calcareous, moderately alkaline (pH 8.0).

Surface soil color may be dark gray or very dark gray, or nearly black. Reaction is neutral to mildly alkaline. Texture may range to a heavy clay loam but is typically clay. Segregated lime occurs at depths of 20 to 60 inches in extreme, but commonly occurs at an average depth of 36 inches. When this soil is dry, deep cracks develop averaging 1/2 to 1 1/2 inches in width, extending to an average depth of 36 inches.

Included in mapping this soil are small bodies of Clear Lake clay, occurring in low depressional positions, 10 percent; also areas of gravelly clay loam overwash ranging from 12 to 30 inches in thickness. ✓

This well drained soil has high fertility and holds about 10 to 12 inches of water plants can use. Permeability is slow. Surface runoff is very slow and erosion hazard is not a problem. Rooting depth is very deep but somewhat restricted by the clay texture.

This soil is used for irrigated prunes, apricots, dryland hay and pasture. Capability unit IIs5 (14).

Cropley clay, 2 to 9 percent slopes (CrC). This soil is similar to Cropley clay, 0 to 2 percent slopes, except it occupies gently to moderately sloping alluvial fans; surface runoff is slow to medium, erosion hazard is slight to moderate. Included in mapping are areas that have a heavy gravelly clay loam or gravelly clay texture.

This soil is used for irrigated prunes, apricots, dryland hay and pasture. Capability unit IIe5 (14).

Cropley clay loam, 0 to 2 percent slopes (CsA). This soil consists of Cropley clay, 0 to 2 percent slopes with calcareous clay loam overwash. Average thickness is about 12 inches, however, the range in thickness is 8 to 20 inches. Included in mapping are areas where the clay loam texture may be 30 inches thick; also, about 15 percent is Campbell silty clay loam.

This soil is used for irrigated row crops, sugar beets, apricots, prunes, walnuts, housing and commercial developments. Capability unit IIs5 (14).

Surface soil color may be dark grayish brown or very dark grayish brown. The surface is usually granular structure in the top few inches. Reaction is slightly to medium acid. Texture will average over 35 percent clay. About 5 to 10 percent of the surface is covered by stones and rock outcrop. Depth to bedrock will average about 10 inches, but will range from 6 to 19 inches.

Included in mapping this soil are areas of Inks rocky clay loam, 15 percent; and small areas of Rock land.

This well drained soil holds about 1 to 2 inches of water for plant use. Fertility is low, because of the shallow soil depth. Permeability is slow. Runoff is rapid and the erosion hazard is high.

This soil is used for dryland pasture and range. Capability unit VIs7 (15); pasture and range site Shallow Loamy.

MADE LAND (Ma)

This miscellaneous land type consists of variable textured soil material and refuse over Alviso soils on Tidal marsh land. Thickness is variable, but fill material may be 4 to 20 feet thick. Because sea water has seeped into these areas, most of the material is strongly affected by salts. This land type is mostly level and occurs northwest of Milpitas at Alviso, north of Mountain View and at the Palo Alto Yacht Harbor.

This land type is used for wildlife and recreation. It has no agricultural value. Capability unit VIIIw6 (14).

MADONNA SERIES

The Madonna series consists of well drained, medium textured soils underlain by strongly acid sedimentary bedrock, at an average depth of 25 inches. These soils formed on moderately sloping to very steep uplands. Vegetation is mostly oak trees, some brush, grasses and forbs. Elevations range from 1,500 to 3,500 feet. Mean annual rainfall is 35 to 50 inches; mean annual air temperature is about 55 to 56° F. The growing season is about 200 to 250 days. Maymen, Ben Lomond and Los Gatos are the principal associated soils.

The surface soil ranges from 2 to 10 inches in thickness and is a pale brown, medium acid loam. The subsoil is a brown, medium acid loam, ranging in thickness from 12 to 18 inches. The substratum is strongly acid, moderately hard coarse grained sandstone.

Madonna soils are used for dryland orchards, hay, pasture, range, Christmas trees, recreation and watershed.

Madonna loam, 30 to 50 percent slopes (MbF). This soil occupies steep uplands with slopes averaging about 35 percent.

inches of water plants can use. Fertility is low because of the shallow soil depth. Subsoil permeability is moderately rapid. Runoff is very rapid and the erosion hazard is very high.

This soil is used for wildlife, recreation and watershed. The vegetation is mostly brush with a few trees near the drainage channels or on north slopes. Capability unit VIIIs1 (15).

Maymen fine sandy loam, 15 to 50 percent slopes, eroded (MeF2). This soil occurs along ridge tops where the average slope is about 35 percent. Rock outcrops cover less than 2 percent of the surface. Rooting depth is shallow, 13 to 19 inches. Runoff is medium to rapid and water holding capacity is 1 to 3 inches. Erosion hazard is high. Otherwise, this soil is the same as Maymen rocky fine sandy loam, 50 to 75 percent slopes, eroded. Included in mapping are 10 percent areas of Madonna loam and 5 percent Ben Lomond fine sandy loam.

This soil is used mainly for limited range, wildlife and watershed. A few acres have been cultivated to grain hay, and a number of summer cabins and mountain homes have been built. Capability unit VIIe4 (15); pasture and range site Shallow Gravelly Loam, steep phase.

MOCHO SERIES

The Mocho series consists of moderately well drained, medium to moderately fine textured soils, underlain by sedimentary alluvium. These soils formed on the nearly level alluvial plains. Vegetation is annual grasses, forbs and scattered large oaks. Elevations range from 100 to 400 feet. Mean annual rainfall ranges from 15 to 20 inches; mean annual air temperature ranges from 58 to 60° F. The growing season is 275 to 300 days. Yolo, Campbell and Sunnyvale are the principal associated soils.

The surface soil ranges in thickness from 12 to 20 inches and is a brown, calcareous loam or clay loam. The subsoil is a pale brown, calcareous loam or clay loam ranging in thickness from 20 to 30 inches. The substratum is light brownish gray calcareous fine sandy loam alluvium.

Mocho soils are used for irrigated row crops, sugar beets and orchards. Areas of these soils are also used for housing and commercial developments.

Mocho loam (Mg). This soil occurs on nearly level alluvial plains with less than 2 percent average slope. Flooding is not usually a problem, except for a few areas in low positions along drainageways, that may be flooded once in 20 years.

Representative profile: 1.2 miles west of Milpitas on Alviso road and 0.3 of a mile south., Santa Clara County, California.

Ap 0 to 8 inches, brown (10YR 5/3) loam, dark brown

(10YR 3/3) moist; moderate fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; plentiful very fine roots; common fine and medium interstitial pores; slightly calcareous, moderately alkaline (pH 8.0); clear smooth boundary. (6 to 9 inches thick).

A12 8 to 18 inches, brown (10YR 5/3) loam, dark brown (10YR 3/3) moist; moderate medium and fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and very fine roots; many fine and medium tubular pores; strongly calcareous, moderately alkaline (pH 8.0); clear smooth boundary. (6 to 11 inches thick).

C1 18 to 35 inches, pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few fine roots; many fine and medium tubular pores; calcareous, moderately alkaline (pH 8.0); clear wavy boundary. (20 to 30 inches thick).

C2 35 to 60 inches, light brownish gray (10YR 6/2) fine sandy loam, dark grayish brown (10YR 4/2) moist; massive; hard, friable, nonsticky and nonplastic; many very fine and fine tubular pores; calcareous, moderately alkaline (pH 8.0).

Color of the surface soil may be brown, grayish brown and dark grayish brown. Reaction is moderately alkaline and usually slightly calcareous. Texture is loam or fine sandy loam. Structure of the surface is granular or subangular blocky. Color of the subsoil is light brownish gray, brown or pale brown. Texture is stratified loam, clay loam, fine sandy loam and sandy loam, although the average texture is a loam. There are places where layers of coarse strata, buried dark gray clay soils and mottling may be present, below 40 inches.

Included in mapping this soil are 10 percent areas of pale brown calcareous loamy soils; and 5 percent Campbell silty clay loam.

This moderately well drained soil holds 8 to 10 inches of water plants can use. Fertility is high. Runoff is very slow and erosion is not a problem. Subsoil permeability is moderate. Depth to rooting zone is very deep.

This soil is used for irrigated row crops, sugar beets, apricots, prunes, pears and cherries. The chief fruit grown is pears. Also about 50 percent of this soil has been used for housing and commercial developments. Capability unit I-1 (14).

Mocho clay loam (Mh). This soil occurs on nearly level alluvial plains. Texture of the surface soil is a clay loam. Subsoil permeability is moderately slow and the soil holds 10 to 11

Orestimba clay loam (Of). This soil is similar to Orestimba silty clay loam, except surface texture is clay loam, and concentration of salts is only slight. Natural drainage is now moderately well because of the general lowering of ground water level in the valley. Average water holding capacity is 9 to 10 inches and fertility is moderate. Most of this soil occupies small level basins east and southeast of San Jose. Included in mapping are areas of Sunnyvale silty clay 10 percent; 5 percent Clear Lake clay; also, a few small areas of moderate to strong concentrations of both neutral and alkaline salts.

This soil is used for irrigated row crops, prunes, pears, dryland hay and pasture. A few areas have been used for housing developments. Capability unit IIIw5 (14).

PACHECO SERIES

The Pacheco series consists of poorly drained, medium textured soils, underlain by sedimentary alluvium. These soils formed on low level alluvial plains. Vegetation is annual grasses and forbs. Elevations range from 150 to 300 feet. Mean annual rainfall is 16 to 20 inches; mean annual air temperature is 58 to 60° F. The growing season is 250 to 300 days. Clear Lake, Yolo, and Willows are the principal associated series.

The surface soil averages 14 to 18 inches in thickness and is a moderately alkaline, grayish brown fine sandy loam, loam, silt loam and clay loam. The subsoil is a mottled light gray, moderately alkaline loam averaging 18 to 25 inches in thickness. The substratum is light gray mottled calcareous, medium textured alluvium.

Pacheco soils are used for irrigated sugar beets, row crops, orchards, pasture and hay.

Pacheco clay loam (Pd). This soil occurs on level low positions of the alluvial plains.

Representative profile: In a field 1/10 of a mile west of pump number 1 on Taix Company ranch; Santa Clara County, California.

Ap 0 to 7 inches, grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate, fine granular structure; hard, friable, sticky and plastic; many fine interstitial and fine tubular pores; moderately alkaline (pH 8.0); clear smooth boundary. (6 to 8 inches thick).

A12 7 to 16 inches, grayish brown (10YR 5/2) clay loam, very dark grayish brown (10YR 3/2) moist; moderate, medium subangular blocky structure; hard, friable, sticky and plastic; many fine interstitial and tubular pores; moderately alkaline (pH 8.0); clear smooth boundary. (8 to 10 inches thick).

C1g 16 to 35 inches, light gray (10YR 6/1) loam, gray, (10YR 5/1) moist; many fine distinct mottles brown (10YR 5/3) dry and dark brown (10YR 4/3) moist; massive; hard, friable, nonsticky and nonplastic; moderately alkaline (pH 8.3); clear smooth boundary. (18 to 25 inches thick).

C2g 35 to 60 inches, light gray (10YR 6/1) very fine sandy loam, gray (10YR 5/1) moist; many large distinct mottles brown (10YR 5/3) dry; dark brown (10YR 3/3) moist; massive; hard, friable, nonsticky and nonplastic; slightly calcareous, moderately alkaline (pH 8.0).

Surface soil color is grayish brown and dark gray. Reaction is mildly to moderately alkaline. Texture is clay loam or silty clay loam. Structure is moderate, fine and medium granular or subangular blocky. Colors of the subsoil may be light brownish gray, light gray or gray with brown and pale brown mottles.Lime is usually present and the reaction is moderately alkaline. Textures are stratified sandy loam to silty clay loam, averaging between 10 to 40 percent clay and more than 15 percent sand. Mottling is usually present at an average depth just over 16 inches.

Included in mapping this soil are 5 percent areas of Clear Lake clay; and similar soils that are calcareous on the surface.

This poorly drained soil holds about 6 to 8 inches of water plants can use. Fertility is moderate and subsoil permeability is moderate. Surface runoff is very slow and this soil is flooded about twice every ten years. Plant rooting depth is limited at an average depth of 36 to 50 inches by the seasonal water table.

This soil is used for irrigated row crops and sugar beets. Early crops are usually destroyed when this soil is flooded. Capability unit IIw2 (14).

Pacheco fine sandy loam (Pa). This soil occurs in low positions southeast of Gilroy, where it is flooded about twice every ten years. Color of the surface is grayish brown. Surface texture may be sandy loam or silt loam, but is usually fine sandy loam. Rooting depth is limited at depths of 36 to 50 inches by a seasonal water table. Average water holding capacity is 5 to 7 inches. Otherwise, this soil is similar to Pacheco clay loam. Included in mapping are 5 percent areas of Clear Lake clay; areas of gravelly texture; and small spots of neutral salt concentrations. Along Carnadero Creek east of Miller railroad siding, about 100 acres of soils with a much substratum.

This soil is used for irrigated row crops and sugar beets. Capability unit IIw2 (14).

Pacheco silt loam, drained (Pb). Except for texture of the surface soil being a silt loam, and the soil holds about 8 to 10 inches of water plants can use, this soil is similar to Pacheco clay loam. Rooting depth is over 60 inches because of a generally lowering of the water table that existed during soil development. It has been flooded in the past about once every 25 years. Included in mapping are 10 percent areas of Yolo loam; and 5 percent areas of gravelly texture.

This soil is used for irrigated row crops, sugar beets, cherries, prunes, walnuts, hay and pasture. Capability unit I-1 (14).

Pacheco clay loam, gravelly substratum (Pe). This soil occurs as gravelly stringers, geographically intermixed with the Pacheco and Campbell soils. Surface soil color is grayish brown or dark gray. Texture may be a loam, clay loam or gravelly clay loam. In general, water tables are below 5 feet, but a few areas have seasonal water tables within 3 feet of the surface that will somewhat restrict rooting depth. The substratum, at an average depth of 36 to 40 inches is sand and gravel. Average water holding capacity is 6 to 8 inches; subsoil permeability is moderately rapid. Otherwise, it is similar to Pacheco clay loam. Included in mapping are areas of sand and gravel, within 20 inches of the surface; and a few areas of pale brown loam 10 to 15 inches in thickness over the normal grayish brown loams.

This soil is used for irrigated row crops, sugar beets, prunes, walnuts and pasture. Capability unit IIs4 (14).

Pacheco loams, clay substratum (Pf). This soil is intermixed with Mocho, Pacheco and Campbell soils. Texture may be a loam, fine sandy loam or clay loam. Generally, water tables are below 4 feet, but a few areas have seasonal water tables within 2 feet of the surface that will somewhat restrict rooting depth. The substratum is a clay that occurs at a depth of 36 to 40 inches. Average water holding capacity is about 4 to 8 inches. Subsoil permeability is slow. Otherwise, it is similar to Pacheco clay loam. Included in mapping are areas of soils that are calcareous on the surface, about 10 percent; and areas where it is only 20 inches to the clay substratum.

This soil is used for irrigated row crops, prunes and pears. Capability unit IIIw5 (14).

PARRISH SERIES

The Parrish series consists of well drained soils, having gravelly fine textured, strongly acid subsoils, underlain at depths of 2 to 3 feet by hard shales. They formed on strongly sloping to very steep uplands. Vegetation is grasses and forbs, oak trees and a few scattered stands of Ponderosa pine. Elevations range from 1,000 to 3,000 feet. Mean annual rainfall is 20 to 30 inches; mean annual air temperature is about 54 to 56° F. The growing season is about 200 to 250 days. Gaviota and Los Gatos are the principal associated soils.

The surface soil ranges in thickness from 4 to 10 inches and is

Permanente stony loam, 50 to 75 percent slopes, severely eroded (PhG3). This soil occurs on very steep uplands with an average slope of 60 percent.

Representative profile: 200 yards south west of radio towers on Black Mountain, Monte Bello Ridge, in the S. E. 1/4 of the S. W. 1/4 of Sec. 13, T. 7 S., R. 3 W., Santa Clara County, California.

A1 0 to 3 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 3/2) moist; moderate, medium granular structure; slightly hard, very friable, nonsticky and slightly plastic; plentiful very fine roots; many very fine tubular and a few medium tubular pores; mildly alkaline (pH 7.5); clear wavy boundary. (2 to 5 inches thick).

A12 3 to 18 inches, brown (7.5YR 5/4) stony loam, dark reddish brown (5YR 3/3) moist; strong, fine granular structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine and medium tubular pores; mildly alkaline (pH 7.5); abrupt irregular boundary. (13 to 15 inches thick).

R 18 inches, bluish, massive limestone

Color of the surface soil may be brown or dark brown. Reaction is mildly alkaline. The granular structure is moderate to strong. Rock outcrops vary from a few percent to about 20 and varying amounts of limestone rock fragments are scattered through the soil. Soil depth varies from 15 to 20 inches, and averages about 18 inches. Past sheet erosion is moderate to severe.

Included in mapping this soil are areas of Maymen rocky fine sandy loam 5 percent; 5 percent Los Gatos gravelly loam; also, areas of Rock land.

This somewhat excessively drained soil holds about 1 to 3 inches of water plants can use. Fertility is low. Runoff is very rapid and the erosion hazard is very high. Permeability is moderate. Soil depth is shallow to limestone bedrock.

This brush covered soil is used for wildlife, recreation and watershed. The limestone substratum is mined by Permanente and used in making cement. Capability unit VIIIsl (15).

PITS (PkG).

This miscellaneous land type consists of excavated substratum material from Yolo and Soper series. The areas have been used principally as a source of gravel or for soil material used in the manufacturing of bricks. Areas in the streambeds are frequently flooded during the rainy season. The surface area is usually lacking in vegetation and the steep slopes slough and slide.

this soil has black clay buried surface horizons at an average depth of 2 to 3 feet.

This soil is used for irrigated row crops and pasture. Drainage, irrigation management and flood control are the main management problems. Capability unit IIIw5 (14).

TERRACE ESCARPMENTS

Terrace escarpments (TeF). This miscellaneous land type consists of steep old terraces, usually with slopes of 30 to 50 percent. Keefers, Pleasanton and Hillgate are the principal associated soils. These areas have not developed distinct soil horizons but are generally gravelly loam or clay loam textured material. Runoff is rapid. Erosion hazard is high. Vegetation is mostly annual grasses, forbs and scattered oaks.

This land type is used for limited range, wildlife and watershed. Capability unit VIIe1 (15); pasture and range site Loamy, steep phase.

TIDAL MARSH

Tidal marsh (Tf). This miscellaneous land type consists of land that is periodically covered by ocean water. Vegetation is a rank growth of cordgrass and pickleweed. Numerous sloughs meander through out this land.

This land type is used for wildlife and recreation. Large areas have been ponded and used for evaporating sea water for the production of salt. Capability unit VIIIw6 (14).

VALLECITOS SERIES

The Vallecitos series consists of well drained soils having fine textured subsoils underlain by sedimentary and metasedimentary bedrock, at depths of about 19 inches. They formed on moderately steep to very steep uplands. Vegetation is annual grasses, forbs and oak trees. Elevations range from 300 to 3,500 feet. Mean annual rainfall is about 16 to 25 inches; mean annual air temperature is about 58 to 60° F. The growing season is about 200 to 250 days. Gaviota and Los Gatos are the principal associated soils.

The surface soil averages 5 to 10 inches in thickness and is a brown slightly and medium acid loam. The subsoil is dark brown and reddish brown, medium acid clay loam and clay, averaging 8 to 20 inches in thickness. The substratum is metamorphosed shale.

Vallecitos soils are used for dryland pasture, range, wildlife, recreation and watershed.

5 percent and 10 percent Gaviota rocky loam. Also included, along drainageways were slopes that range up to 45 percent; a few areas of gray, moderately alkaline soil, and areas that are over 4 feet deep to soft serpentinized shale.

This well drained soil has moderate fertility and holds about 2 to 4 inches of water for plant use. Subsoil permeability is slow. Surface runoff is medium and the erosion hazard is moderate. Rooting depth is generally shallow to bedrock.

This soil is used for dryland pasture and range. Vegetative cover is mostly grasses and forbs with scattered oak trees. The surface soil over most of the area is crusted from being trampled by livestock. Capability unit VIe1 (15); pasture and range site Shallow Loamy.

Vallecitos loam, 30 to 50 percent slopes (VaF). This soil occupies steep uplands with about 40 percent average slope. Texture of the surface soil is a loam or clay loam. Runoff is rapid and erosion hazard is high. Otherwise, this soil is similar to Vallecitos loam, 15 to 30 percent slopes, eroded. Included in mapping are areas of 10 percent Los Gatos gravelly loam; 5 percent Gaviota rocky loam and areas of moderate to severe sheet and gully erosion.

This soil is used for dryland pasture and range. Capability unit VIIe1 (15); pasture and range site Shallow Loamy, steep phase.

Vallecitos loam, 50 to 75 percent slopes, eroded (VaG2). This soil occupies areas of very steep slopes with narrow, somewhat angular to rounded, winding ridgetops and as mountainous areas. Slopes generally range from 50 to 60 percent. It is shallow and will average about 16 inches to bedrock, but will range from 13 to 24 inches. Runoff is very rapid, and erosion hazard is very high. Otherwise, this soil is similar to Vallecitos loam, 15 to 30 percent slopes, eroded. Included in mapping are areas of 10 percent Gaviota rocky loam; and on north slopes, 5 percent Los Osos clay loam; also, areas of Rock land and severe sheet erosion.

This soil is used for range, wildlife, recreation and watershed. Vegetative cover is generally thin grass and forbs with scattered oak trees and Digger pine, but some of the more eroded areas have a thin brush cover. Capability unit VIIe1 (15); pasture and range site Shallow Loamy, very steep phase.

WILLOWS SERIES

The Willows series consists of fine textured, poorly drained soils underlain by sedimentary alluvium. They formed in low level positions of the alluvial plains. Vegetation consists of saline-alkali tolerant grasses and forbs. Elevations range from

100 to 400 feet. Mean annual rainfall ranges from 16 to 20 inches; mean annual air temperature is 58 to 60° F. The growing season is about 250 to 325 days. Clear Lake and Pacheco are the principal associated soils.

The surface soil ranges in thickness from 10 to 15 inches, and is a dark gray, slightly calcareous clay. The subsoil is mottled olive gray, calcareous clay, averaging 18 to 25 inches in thickness. Deep cracks develop in the surface and subsoil when these soils are dry. The substratum is light olive gray, mottled, calcareous clayey alluvium. The soils contain slight to moderate concentrations of both neutral and alkaline salts.

Willows soils are used for limited irrigated row crops, dryland grain hay and pasture. A few areas have been used for housing developments.

Willows clay (Wa). This soil occurs in the low level alluvial plain positions, with no well defined drainage channels.

Representative profile: South on Frazer Lake road, 3/8 of a mile from the Bloomfield Avenue intersection and 3/8 of a mile north into a field, toward the Pajaro River; Santa Clara County, California.

Ap 0 to 6 inches, dark gray (5Y 4/1) clay, very dark gray (5Y 3/1) moist; moderate medium and fine granular structure; very hard, firm, sticky and very plastic; few very fine and medium roots; many very fine interstitial, tubular and a few medium tubular pores; slightly effervescent, disseminated lime; moderately alkaline (pH 8.0); abrupt smooth boundary. (4 to 7 inches thick).

A12 6 to 12 inches, dark gray (5Y 4/1) clay, very dark gray (5Y 3/1) moist, few fine distinct mottles light brownish gray (2.5Y 6/2) dry and light olive brown (2.5Y 5/4) moist; strong coarse angular blocky structure; extremely hard, very firm, sticky and very plastic; abundant very fine and a few medium roots; many very fine interstitial, tubular and a few medium tubular pores; many intersecting slickensides; slightly effervescent, disseminated lime; moderately alkaline (pH 8.0); clear smooth boundary. (6 to 8 inches thick).

A13ca 12 to 31 inches, olive gray (5Y 5/2) clay, dark olive gray (5Y 3/2), many fine distinct mottles brown (10YR 5/3) dry and dark brown (10YR 4/3) moist; strong coarse prismatic structure; extremely hard, very firm, sticky and very plastic; plentiful very fine and medium roots; many very fine interstitial, tubular and a few medium tubular pores; many intersecting slickensides; strongly effervescent lime occurs in seams and soft masses; few medium sized gypsum crystals present in pores; strongly alkaline (pH 8.5); clear smooth boundary. (18 to 25 inches thick).

Cca 31 to 60 inches, light olive gray (5Y 6/2) clay, olive gray (5Y 5/2) moist, common fine distinct mottles brown (10YR 5/3) dry and dark brown (10YR 4/3) moist, and a few distinct mottles gray (5Y 6/1) dry and gray (5Y 5/1) moist; massive; very hard, firm, sticky and plastic; many very fine interstitial, tubular and a few medium tubular pores; many intersecting slickensides in the upper 10 inches; strongly effervescent, disseminated lime;strongly alkaline (pH 8.5).

Surface soil color may be dark gray or dark grayish brown. Reaction is moderately alkaline; lime is usually present in the lower surface. Few to many medium sized salt crystals are commonly found in the lower surface soil or subsoil. Texture is typically clay. When this soil is dry, deep cracks develop, averaging 1/2 to 1 1/2 inches in width. Color of the subsoil is olive gray, light olive gray or light yellowish brown. Distinct mottles start at an average depth of 12 inches and the colors are light brownish gray or brown and are gray in the lower subsoil.

Included in mapping this soil are areas of 15 percent Clear Lake clay; and a few areas of gentle slopes. About 20 percent of this acreage is covered by sandy clay loam textured overwash material 10 to 20 inches in thickness.

This poorly drained soil has a water table that fluctuates seasonally within 20 to 40 inches. Fertility is affected by moderate concentrations of neutral salts. It usually becomes ponded during winter months and erosion is not a problem. Subsoil permeability is slow and the average water holding capacity is about 4 to 7 inches. Rooting depth is usually restricted by the water table.

This soil is used for limited irrigated row crops and pasture. Salt tolerant grasses and forbs are the main pasture plants. Capability unit IVw6 (14).

Willows clay, slightly alkali (Wb). This soil has only slight concentrations of salts and salt tolerant plants are not usually affected. The water table is below 60 inches because natural drainage has improved with general lowering of the ground water level in the valley. Otherwise, this soil is similar to Willows clay. Included in mapping are areas of 10 percent Orestimba clay; 5 percent Sunnyvale silty clay; and areas with moderate to strong salt concentrations.

This soil is used for irrigated row crops, sugar beets, pears, and dryland grain hay and pasture. A few areas have been used for housing developments. Capability unit IIIw5 (14).

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
AcF	Altamont clay, 30 to 50 percent slopes		
AcE	Altamont clay, 15 to 30 percent slopes		
AcE2	Altamont clay, 15 to 30 percent slopes, eroded		
AcG2	Altamont clay, 50 to 75 percent slopes, eroded		
An	Alviso clay	Alviso (CA0141)	
ArA	Arbuckle gravelly loam, 0 t0 2 percent slopes		
AkC	Arbuckle loam, deep, 5 to 9 percent slopes		
AsE	Ayar clay, 15 to 30 percent slopes		
AsD	Ayar clay, 9 to 15 percent slopes		
AsF	Ayar clay, 30 to 50 percent slopes		
AuG	Azule clay loam, 30 to 75 percent slopes		
AuG2	Azule clay loam, 30 to 75 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
AvD2	Azule silty clay loam, 9 to 15 percent slopes, eroded		
AvE	Azule silty clay loam, 15 to 30 percent slopes		
AvE2	Azule silty clay loam, 15 to 30 percent slopes, eroded		
Ba	Bayshore clay loam	Bayshore (CA1337)	
BeG	Ben Lomond fine sandy loam, 50 to 75 percent slopes		
Ca	Campbell silty loam	Clear Lake (CA0013)	low alluvial plains
Cd	Campbell silty clay	Clear Lake (CA0013)	low alluvial plains
Cc	Campbell silty clay loam, clay substratum	Cambell (CA1356)	
Ce	Cambell silty clay, muck substratum	Cambell (CA1356)	
Cf	Castro clay		
Ch	Clear Lake clay drained	Cambell (CA1356) Sunnyvale (CA1361)	low bottoms alluvial plains
Cg	Clear [illegible]	Clear Lake (CA0013)	
Ck	Clear Lake clay saline	Clear Lake (CA1322)	

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
CmE	Climara stony clay, 15 to 50 percent slopes		
CnD	Climara clay, 9 to 30 percent slopes		
CoB	Cortina very gravelly loam, 0 to 5 percent slopes	River wash	drainage ways
CrA	Cropley clay, 0 to 2 percent slopes	Clear Lake (CA0013)	Depressions
CrC	Cropley clay, 2 to 9 percent slopes		
CsA	Cropley clay loam 0 to 2 percent slopes	Cambell (CA1356)	
DaD	Diablo clay, 9 to 15 percent slopes		
DaE	Diablo clay, 15 to 30 percent slopes		
DaE2	Diablo clay, 15 to 30 percent eroded		
DaF	Diablo clay, 30 to 50 percent slopes		
EsA	Esparto loam, 0 to 2 percent slopes		
EsC	Esparto loam, 2 to 9 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
FaG	Felton silt loam, 50 to 75 percent slopes		
FaE	Felton silt loam, 15 to 30 percent slopes		
FaF	Felton silt loam, 30 to 50 percent slopes		
FbG	Felton-Ben Lomond complex, 50 to 75 percent slopes		
GaA	Garretson loam, gravel substratum 0 to 2 percent slopes		
GbB	Garretson gravelly loam, 0 to 5 percent slopes		
GpA	Garretson fine sany loam, 0 to 2 percent slopes		
GcG	Gaviota loam, 30 to 75 percent slopes		
GcD2	Gaviota loam, 5 to 15 percent slopes, eroded		
GcE	Gaviota loam, 15 to 30 percent slopes		
GkE2	Gaviota rocky loam 5 to 30 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
GhG2	Gaviota gravelly loam, 30 to 75 percent slopes, eroded		
GhG3	Gaviota gravelly 30 to 75 percent slopes, serverly eroded		
GmE	Gaviota-Los Gates complex, 15 to 30 percent slopes		
GmF	Gaviota-Los Gates complex, 30 to 50 percent slopes		
GoF	Gilroy clay loam, 30 to 50 percent slopes		
GoD	Gilroy clay loam, 5 to 30 percent slopes		
GoE2	Gilroy clay loam, 15 to 30 percent slopes, eroded		
GoG	Gilroy clay loam, 50 to 75 percent slopes		
HeG3	Henneke rocky clay loam, 30 to 75 percent slopes, severely eroded		
HfD2	Hillgate silt loam, 9 to 15 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
HfC	Hillgate silt loam, 2 to 9 percent slopes		
HfE2	Hillgate silt loam, 15 to 30 percent slopes, eroded		
HfF2	Hillgate stilt loam, 30 to 50 percent slopes, eroded		
InG2	Inks rocky clay loam, 50 to 75 percent slopes, eroded		
IsG3	Inks stony clay loam, 30 to 75 percent slopes, severly eroded		
KeC2	Keefers clay loam 2 to 9 percent slopes, eroded	Un-named soils	seep and marsh areas
KeA	Keefers clay loam, 0 to 2 percent slopes	Un-named soils	seep and marsh areas
KfB	Kitchen middens		
LaF	Lanslides		
LfG	Los Gatos gravelly loam, 50 to 75 percent slopes		
LfE2	Los Gatos gravelly loam, 15 to 30 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
LfF	Los Gatos gravelly loam, 30 to 50 percent slopes		
LgE	Los Gatos clay loam, 15 to 30 percent slopes		
LgE2	Los Gatos clay loam, 15 to 30 percent slopes, eroded		
LhG	Los Gatos-Gaviota complex, 50 to 75 percent slopes		
LkG3	Los Gatos and Maymen soils, 50 to 75 percent slopes, severely eroded		
LoE	Los Osos clay loam, 15 to 30 percent slopes		
LoF	Los Osos clay loam 30 to 50 percent slopes		
LoG	Los Osos clay loam, 50 to 75 percent slopes		
LrA	Los Robles clay loam, 0 to 2 percent slopes		
LrC	Los Robles clay loam, 2 to 9 percent slopes		
LtD	Los Trancos stony clay, 15 to 30 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
Ma	Made land		
MbF	Madonna loam, 30 to 50 percent slopes		
MbE	Madonna loam, 15 to 30 percent slopes		
MbE2	Madonna loam, 5 to 30 percent slopes, eroded		
MbG	Madonna loam, 50 to 75 percent slopes		
McB	Maxwell clay, 0 to 5 percent slopes		
MfG2	Maymen rocky fine sandy loam, 50 to 75 percent slopes, eroded		
MeF2	Maymen fine sandy loam, 15 to 50 percent slopes, eroded		
Mg	Mocho loam		
Mh	Mocho clay loam		
Mk	Mocho soils, undifferentiated		
MwF2	Montara rocky clay loam, 15 to 50 percent slopes, eroded		
MxF3	Montara stony clay loam. 30 to 50 percent slopes, severely eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
MyE	Montara-Climara complex, 15 to 30 percent slopes		
Og	Orestimba silty clay loam	Orestimba	
Of	Orestimba clay loam	Orestimba	
Pd	Pacheco clay loam	Clear Lake (CA0013)	low alluvial plains
Pa	Pacheco fine sandy loam	Clear Lake (CA0013)	low alluvial plains
Pb	Pacheco silt loam, drained		
Pe	Pacheco clay loam, gravelly substratum	Pacheco (CA0048)	
Pf	Pacheco loams, clay substratum	Pacheco	small areas with high water tables
PgE	Parrish gravelly clay loam, 9 to 30 percent slopes		
PgF	Parrish gravelly clay loam, 30 to 50 percent slopes		
PgG	Parrish gravelly clay loam, 50 to 75 percent slopes		
Pg3	Permanente stony loam, 50 75 percent slopes, severely eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
PkG	Pits		
PoA	Pleasanton loam, 0 to 2 percent slopes		
PoC	Pleasanton loam, 2 to 9 percent slopes		
PpA	Pleasanton gravelly loam, 0 to 2 percent slopes		
PpC	Pleasanton gravelly loam, 2 to 9 percent slopes		
PpD2	Pleasanton gravelly loam, 9 to 15 percent slopes, eroded		
PpE2	Pleasanton gravelly loam, 15 to 30 percent slopes, eroded		
PrD	Positas-Saratoga loams, 9 to 15 percent slopes		
PrC	Positas-Saratoga loams, 2 to 9 percent slopes		
RhA	Rincon clay loam, 0 to 2 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
Rg	Riverwash	Riverwash	
RnG	Rock land		
SaG2	San Andreas fine sandy loam, 30 to 75 percent slopes, eroded		
SaE2	San Andreas fine sandy loam, 15 to 30 percent slopes, eroded		
SbG	San Benito clay loam, 50 to 75 percent slopes		
SbE2	San Benito clay loam, 15 to 30 percent slopes, eroded		
SbF	San Benito clay loam, 30 to 50 percent slopes		
SbF3	San Benito clay loam, 30 to 50 percent slopes, severely eroded		
ScG	Santa Lucia shaly loam, 50 to 75 percent slopes		
ScF2	Santa Lucia shaly loam, 30 to 50 percent slopes, eroded		
SdA	San Ysidro loam, 0 to 2 percent slopes	San Ysidro	Areas subjected to ponding
SdB2	San Ysidro loam, 2 to 9 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
SdD	San Ysidro loam, 9 to 15 percent slopes		
SeA	San Ysidro clay, overwash, 0 to 2 percent slopes		
SfA	San Ysidro loam, acid variant, 0 to 2 percent slopes		
SfC	San Ysidro loam, acid variant, 2 to 9 percent slopes		
SgC	Saratoga-Positas loams, 2 to 9 percent slopes		
SgD	Saratoga-Positas loams, 9 to 15 percent slopes		
SgE	Saratoga-Positas loams, 15 to 30 percent slopes		
ShE2	Soper gravelly loam, 15 to 30 percent slopes, eroded		
ShF	Soper gravelly loam, 30 to 50 percent slopes		
Sv	Sunnyvale silty clay, drained	Clear Lake (CA0013)	low alluvial plains
Su	Sunnyvale silty clay	Sunnyvale (CA1381)	

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
TeF	Terrace Escarpments		
Tf	Tidal marsh	Tidal Marsh	
VaE2	Vallecitos loam, 15 to 30 percent slopes, eroded		
Vaf	Vallecitos loam, 30 to 50 percent slopes		
VaG2	Vallecitos loam, 50 to 75 percent slopes, eroded		
Wa	Willows clay	Willows (CA0419)	
Wb	Willows clay, slightly alkali	Willows (CA0419)	
YaA	Yolo loam, 0 to 2 percent slopes		
YaB	Yolo loam, 2 to 5 percent slopes		
YeA	Yolo silty clay loam, 0 to 2 percent slopes		
YeC	Yolo silty clay loam, 2 to 9 percent slopes		
ZbA	Zamora clay loam, 0 to 2 percent slopes		
ZbC	Zamora clay loam, 2 to 9 percent slopes		
ZaA	Zamora loam, 0 to 2 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
ZaC	Zamora loam, 2 to 9 percent slopes		
ZeC3	Zamora and Cropley soils, 2 to 9 percent slopes, severely eroded		

APPENDIX C

DATA FORMS: ROUTINE DETERMINATION METHOD FOR THE LOWER GUADALUPE RIVER PROJECT SITE

APPENDIX C

DATA FORMS: ROUTINE DETERMINATION METHOD FOR THE LOWER GUADALUPE RIVER PROJECT SITE

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 1A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 1
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Bromus diandrus*	H	UPL	9.		
2. Baccharis pilularis	S	UPL	10.		
3. Lepidium latifolium	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sample point located on slope of levee road

HYDROLOGY

☑ Recorded Data (Describe in Remarks):
- ☐ Stream, Lake, or Tide Gauge
- ☑ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >12 (in.)

Depth to Saturated Soil: >12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 in.
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Historic and current aerial photos show presence of levee where sample point was taken.

SOILS

Map Unit Name
(Series and Phase) Tidal Marsh

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	A	10YR 3/1			Clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: Dark peds (10YR 3/1) coated w/ coarse-textured particles (10YR 4/2)
Soil comprised of mixture of fill material (non-native soil, gravel, glass, plastic); Historic soils classified as tidal marsh

WETLAND DETERMINATION

	(Circle)		(Circle)
Hydrophytic Vegetation Present?	Yes [✓ No]		
Wetland Hydrology Present?	Yes [✓ No]		
Hydric Soils Present?	Yes [✓ No]	Is this Sampling Point Within a Wetland?	Yes [✓ No]

Remarks: Sample point occurs on steep levee bank that is dominated by upland species.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 1B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes]
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Brackish Marsh
Transect ID: 1
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium*	H	FACW	9.		
2. Scirpus robustus	H	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Sample point located on lower banks of the river; hydrophytes dominate.

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 12 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Historic and current aerial photos show presence of channel w/ adjacent marsh vegetation in vicinity of sample point

SOILS

Map Unit Name (Series and Phase): Tidal Marsh

Taxonomy (Subgroup):

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0–10"	A	2.5Y 4/2			silty clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: sample point occurs on lower banks of river; soil is of Fluvial origin; meandering side channels present throughout area; Peraquic Moisture Regime

WETLAND DETERMINATION

	(Circle)
Hydrophytic Vegetation Present?	[✓ Yes] No
Wetland Hydrology Present?	[✓ Yes] No
Hydric Soils Present?	[✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point occurs on lower banks of river, hydrophytes dominate

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 1C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes]
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Open Water
Transect ID: 1
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sample point occurs within open water

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

Field Observation:

Depth of Surface Water: ________ (in.)

Depth to Free Water in Pit: ________ (in.)

Depth to Saturated Soil: ________ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ☐ Saturated in Upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 in.
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Sample point occurs within active channel; visual observation of inundation; Stream data for Guadalupe River was referenced as background data; historic & current photos document channel

SOILS

Map Unit Name (Series and Phase) Tidal Marsh

Drainage Class:

Field Observations

Taxonomy (Subgroup):

Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Not Sampled Due to Inundation

Hydric Soil Indicators:

☐ Histosol

☐ Histic Epipedon

☐ Sulfidic Odor

☐ Aquic Moisture Regime

☐ Reducing Conditions

☐ Gleyed or Low-Chrome colors

☐ Concretions

☐ High Organic Content in Surface Layer in Sandy Soils

☐ Organic Streaking in Sandy Soils

☑ Listed on Local Hydric Soils List

☐ Listed on National Hydric Soils List

☐ Other (Explain in Remarks)

Remarks: Peraquic moisture regime; Soil is permanently inundated, soil not sampled

WETLAND DETERMINATION

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]

Wetland Hydrology Present? [✓ Yes] No

Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs within actively flowing channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
2A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes]
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 2
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Avena fatua *	H	UPL	9.		
2. Oryzopsis miliacea	H	UPL	10.		
3. Lepidium latifolium	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sample point occurs on levee bank; upland species dominate.

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: Historical and current aerial photographs show presence of levee where sample was taken. No field hydrologic features observed

SOILS

Map Unit Name
(Series and Phase) Tidal Marsh

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"	A	10YR 3/1			clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: soil comprised of fill material (non-native soil, gravel, glass, plastic) Historic soils classified as tidal marsh

WETLAND DETERMINATION

(Circle)
Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on steep levee bank that is dominated by upland species.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 2B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? No [✓ Yes]
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Brackish Marsh
Transect ID: 2
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus californicus*	H	OBL	9.		
2. Scirpus robustus*	H	OBL	10.		
3. Polygonum arenastrum	H	FAC	11.		
4. Typha angustifolia	H	OBL	12.		
5. Rumex crispus	H	FACW-	13.		
6. Leersia oryzoides	H	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: sample point occurs on lower banks of river; area dominated by hydrophytes

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
✓ Stream, Lake, or Tide Gauge
✓ Aerial Photographs
☐ Other
☐ No Recorded Data Available

Field Observation:

Depth of Surface Water: 1 (in.)

Depth to Free Water in Pit: >12 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

✓ Inundated
✓ Saturated in Upper 12 inches
☐ Water Marks
☐ Drift Lines
☐ Sediment Deposits
☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

☐ Oxidized Root Channels in Upper 12 in.
☐ Water-Stained Leaves
☐ Local Soil Survey Data
☐ FAC-Neutral Test
☐ Other (Explain in Remarks)

Remarks: Historical and current photographs show presence of channel w/ adjacent marsh vegetation w/in vicinity of sample site.

SOILS

Map Unit Name
(Series and Phase) Tidal Marsh

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10	A	4/10 G			silty clay

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aquic Moisture Regime
☑ Reducing Conditions
☑ Gleyed or Low-Chrome colors

☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
☑ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks: Peraquic moisture regime; soils are Fluvial in origin.

WETLAND DETERMINATION

	(Circle)	
Hydrophytic Vegetation Present?	[✓ Yes]	No
Wetland Hydrology Present?	[✓ Yes]	No
Hydric Soils Present?	[✓ Yes]	No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point occurs on lower banks of channel; hydrophytes dominate

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 2C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes]
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Open Water
Transect ID: 2
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sample point occurs in open water

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: ________(in.)

Depth to Free Water in Pit: ________(in.)

Depth to Saturated Soil: ________(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Sample point occurs within active channel; visual observation of inundation; Stream data for Guadalupe River was referenced for this location. Historic & current aerial photos document channel

SOILS

Map Unit Name
(Series and Phase) Tidal Marsh

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Not Sampled
Due to Inundation

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aquic Moisture Regime
Reducing Conditions
Gleyed or Low-Chrome colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
✓ Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: Peraquic moisture regime; soil is permanently inundated, soil was not sampled

WETLAND DETERMINATION

	(Circle)
Hydrophytic Vegetation Present?	Yes [✓ No]
Wetland Hydrology Present?	[✓ Yes] No
Hydric Soils Present?	[✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs within a river channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 3A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes]
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 3
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Bromus diandrus*	H	UPL	9.		
2. Lepidium latifolium	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sample point occurs on a levee bank

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Historic and current aerial photographs show presence of levee; No field hydrologic features observed.

SOILS

Map Unit Name (Series and Phase): Tidal Marsh

Taxonomy (Subgroup):

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10	A	10YR 3/3			Clay

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: Soil contains Fill material (non-native soil, gravel, glass, plastic. Historic soils classified as tidal marsh

WETLAND DETERMINATION

	(Circle)
Hydrophytic Vegetation Present?	Yes [✓ No]
Wetland Hydrology Present?	Yes [✓ No]
Hydric Soils Present?	Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on slope of levee bank; upland species dominate.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 3B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: P. Boursier, M. Bacca

Date: November 1996
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes]
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes
Is the area a potential Problem Area? [✓ No] Yes
(If needed, explain on reverse.)

Community ID: Brackish Marsh
Transect ID: 3
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus californicus*	H	OBL	9.		
2. Scirpus robustus	H	OBL	10.		
3. Leersia oryzoides*	H	OBL	11.		
4. Polygonum arenastrum	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: sample point occurs on lower banks of river; hydrophytes dominate

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 6 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ✓ Saturated in Upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 in.
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Sample point occurs on lower banks of river
Historic and current photographs document location of channel w/ adjacent marsh vegetation in vicinity of site

SOILS

Map Unit Name (Series and Phase) Tidal Marsh

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10	A	2.5Y 4/2			Silty clay

Hydric Soil Indicators:

Histosol

Histic Epipedon

Sulfidic Odor

Aquic Moisture Regime

Reducing Conditions

Gleyed or Low-Chrome colors

Concretions

High Organic Content in Surface Layer in Sandy Soils

Organic Streaking in Sandy Soils

✓ Listed on Local Hydric Soils List

Listed on National Hydric Soils List

Other (Explain in Remarks)

Remarks: Sample point occurs on lower banks of river; soil is of Fluvial origin; peraquic moisture regime

WETLAND DETERMINATION

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No

Wetland Hydrology Present? [✓ Yes] No

Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point occurs on lower banks of river channel and hydrophytes dominate.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 3C

Project/Site: Lower Guadalupe River	Date: November 1996
Applicant/Owner: Santa Clara Valley Water District	County: Santa Clara County
Investigator: P. Boursier, M. Bacca	State: California
Do Normal Circumstances exist on the site? No [✓ Yes]	Community ID: Open Water
Is the site significantly disturbed (Atypical Situations?) [✓ No] Yes	Transect ID: 3
Is the area a potential Problem Area? [✓ No] Yes (If needed, explain on reverse.)	Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sample Point is within open water No Vegetation present

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: ________(in.)

Depth to Free Water in Pit: ________(in.)

Depth to Saturated Soil: ________(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Sample point occurs within active channel; visual observation of inundation; stream data for Guadalupe R. was referenced for this area; Historic and current aerial photos show presence of channel in vicinity of sample site

SOILS

Map Unit Name (Series and Phase) Tidal Marsh

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Not Sampled Due to Inundation

Hydric Soil Indicators:

Histosol

Histic Epipedon

Sulfidic Odor

Aquic Moisture Regime

Reducing Conditions

Gleyed or Low-Chrome colors

Concretions

High Organic Content in Surface Layer in Sandy Soils

Organic Streaking in Sandy Soils

✓ Listed on Local Hydric Soils List

Listed on National Hydric Soils List

Other (Explain in Remarks)

Remarks: Peraquic moisture regime; sample point occurs within open water

WETLAND DETERMINATION

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]

Wetland Hydrology Present? [✓ Yes] No

Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: sample point occurs within river channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
4A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: January 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 4
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Oryzopsis miliacea*	H	UPL	9.		
2. Hordeum leporinum	H	UPL	10.		
3. Conyza canadensis	H	FAC	11.		
4. Raphanus sativus	H	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16" (in.)

Depth to Saturated Soil: >16" (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: Historic & current aerial photographs show presence of levee
No field hydrologic features observed

SOILS

Map Unit Name: (Series and Phase) ?Tidal Marsh

Taxonomy (Subgroup):

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	50/50 Matrix: 10YR 3/2, 10YR 4/3	—	—	Clay Loam

Hydric Soil Indicators:

Histosol

Histic Epipedon

Sulfidic Odor

Aquic Moisture Regime

Reducing Conditions

Gleyed or Low-Chrome colors

Concretions

High Organic Content in Surface Layer in Sandy Soils

Organic Streaking in Sandy Soils

✓ Listed on Local Hydric Soils List

Listed on National Hydric Soils List

Other (Explain in Remarks)

Remarks: Pit occurs on levee bank; soil comprised of fill material: non-native soil, gravel; historic soil was tidal marsh

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]

Wetland Hydrology Present? Yes [✓ No]

Hydric Soils Present? Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Site occurs on levee bank; soils are non-native fill that drain relatively well - upland species dominate.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 4B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date:
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Brackish Marsh
Transect ID: 4
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus robustus*	H	OBL	9.		
2. Lepidium latifolium	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

X Recorded Data (Describe in Remarks):
    ___ Stream, Lake, or Tide Gauge
    X Aerial Photographs
    ___ Other
___ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 inches
- ✓ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Historic and current aerial photographs show presence of channel w/ adjacent marsh vegetation in vicinity of sample point.

SOILS

Map Unit Name: Tidal Marsh
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	2.5Y 4/2	—	—	Silty Clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: Peraquic moisture regime

(Circle)	
Hydrophytic Vegetation Present?	[✓ Yes] No
Wetland Hydrology Present?	[✓ Yes] No
Hydric Soils Present?	[✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Site occurs on fluvial soils that are influenced by high water table and support a predominance of hydrophytes.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 4C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: January 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Open water
Transect ID: 4
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Sample point occurs w/in open water

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: ______(in.)

Depth to Free Water in Pit: ______(in.)

Depth to Saturated Soil: ______(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Sample point occurs within open water of channel; Visual observation of inundation; stream data for Guadalupe River was referenced as background material

SOILS

Map Unit Name: Tidal Marsh
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Not Sampled Due to Inundation

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chrome colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Peraquic moisture regime

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs within actively flowing channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
5A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: January 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Brackish Marsh
Transect ID: 5
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus robustus*	H	OBL	9.		
2. Lepidium latifolium	H	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____ (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name:
(Series and Phase) Tidal Marsh

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	4/10Y	—	—	clay

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aquic Moisture Regime
✓ Reducing Conditions
✓ Gleyed or Low-Chrome colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: Peraquic Moisture Regime

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point occurs on fluvial soils that are influenced by a high water table and support a predominance of hydrophytes.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
5B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date:
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 5
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Baccharis pilularis	S	UPL	9.		
2. Bromus diandrus*	H	UPL	10.		
3. Carduus pycnocephalus	H	UPL	11.		
4. Brassica nigra	H	UPL	12.		
5. Foeniculum vulgare	H	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____ (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: No Field hydrologic Features observed; site is on an elevated Fill bench above brackish marsh

SOILS

Map Unit Name:
(Series and Phase) Made Land

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10"	A	10YR 3/2	—	—	

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
___	Gleyed or Low-Chrome colors	___	Other (Explain in Remarks)

Remarks: Site occurs on fill material which consists of non-native soil, gravel, concrete, scrap metal.

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Site occurs on elevated fill bench above brackish marsh. Vegetation dominated by upland species.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
6A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: January 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 6
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Oryzopsis miliacea*	H	UPL	9.		
2. Bromus diandrus*	H	UPL	10.		
3. Hordeum geniculatum	H	FAC	11.		
4. Rhaphanus sativus	H	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
  Stream, Lake, or Tide Gauge
  ✓ Aerial Photographs
  Other
No Recorded Data Available

Field Observation:

Depth of Surface Water: ________(in.)

Depth to Free Water in Pit: ________(in.)

Depth to Saturated Soil: ________(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ______ Inundated
- ______ Saturated in Upper 12 inches
- ______ Water Marks
- ______ Drift Lines
- ______ Sediment Deposits
- ______ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ______ Oxidized Root Channels in Upper 12 in.
- ______ Water-Stained Leaves
- ______ Local Soil Survey Data
- ______ FAC-Neutral Test
- ______ Other (Explain in Remarks)

Remarks: No hydrologic features observed; Historic and current aerial photographs

SOILS

Map Unit Name: Campbell
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 4/1	—	—	

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome colors

- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: Site on slope of levee; soil consists of fill material: non-native soil, gravel

(Circle)
Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Site on sideslope of levee; non-native soil supports ruderal, upland species.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 6B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: January 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Brackish Marsh
Transect ID: 6
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha angustifolia	H	OBL	9.		
2. Lepidium latifolium*	H	FACW	10.		
3. Scirpus robustus	H	OBL	11.		
4. Scirpus californicus	H	OBL	12.		
5. Polygonum sp.	H		13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: 12 (in.)

Depth to Saturated Soil: 10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Historic and current photos show channel w/ adjacent marsh vegetation w/in vicinity of sample point. Vegetation is "lodged" over due to unseasonably high flows previous winter.

SOILS

Map Unit Name: Campbell
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	2.5Y 4/2	10YR 5/6	Few/Faint	

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ✓ Reducing Conditions
- ___ Gleyed or Low-Chrome colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Peraquic Moisture Regime

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
6C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: January 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: open water
Transect ID: 6
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Site occurs w/in actively flowing channel

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____(in.)

Depth to Free Water in Pit: ____(in.)

Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Historic and current photos show channel within vicinity of site, Stream data for Guadalupe River was referenced for this location.

SOILS

Map Unit Name: Campbell
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

NOT SAMPLED DUE TO INUNDATION

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chrome colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: Peraquic Moisture Regime

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Site occurs within actively Flowing river channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 7A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 7
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium*	H	FACW	9.		
2. Bromus diandrus	H	UPL	10.		
3. Vulpia myuros*	H	FACU	11.		
4. Baccharis pilularis	S	UPL	12.		
5. Acer negundo	T	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks:

HYDROLOGY

☑ Recorded Data (Describe in Remarks):
  - ☐ Stream, Lake, or Tide Gauge
  - ☑ Aerial Photographs
  - ☐ Other

☐ No Recorded Data Available

Field Observation:

Depth of Surface Water: ______(in.)

Depth to Free Water in Pit: ______(in.)

Depth to Saturated Soil: ______(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 in.
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: No hydrologic features observed
Historic and current photos show presence of levee in which sample point occurs.

SOILS

Map Unit Name: Campbell
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR3/2	—	—	Clay Loam

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aquic Moisture Regime
☐ Reducing Conditions
☐ Gleyed or Low-Chrome colors

☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
☑ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks: No hydric Features observed; soil consists of fill material (non-native soil, gravel) on levee slope.

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Site occurs on lower slope of levee - Evidence of unusually high Flow events such as debris matting w/in standing vegetation.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
7B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 7
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus californicus*	H	OBL	9.		
2. Lepidium latifolium	H	FACW	10.		
3. Typha angustifolia	H	OBL	11.		
4. Scirpus robustus	H	OBL	12.		
5. Aster chilensis*	H	FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >18 (in.)

Depth to Saturated Soil: 18 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- ✓ Water Marks
- Drift Lines
- ✓ Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: Historic and current photos show presence of channel w/ adjacent marsh vegetation w/in vicinity of sample point.

SOILS

Map Unit Name: Campbell
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 3/2	10YR 4/6	Few/Faint	Silty Clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
✓	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks:

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Site occurs on fluvial soil deposits that are influenced by high water table and support predominance of hydrophytic species.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
7C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: open water
Transect ID: 7
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Site occurs within actively flowing channel. - No vegetation is present

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ✓ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ☐ Other

☐ No Recorded Data Available

Field Observation:

Depth of Surface Water: ________(in.)

Depth to Free Water in Pit: ________(in.)

Depth to Saturated Soil: ________(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ☐ Saturated in Upper 12 inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ☐ Oxidized Root Channels in Upper 12 in.
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

Remarks: Sample point within active channel; visual observation of inundation. Stream data for Guadalupe R. was referenced for this area. Historic & current photos show presence of channel in vicinity of sample site.

SOILS

Map Unit Name: Campbell
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

NOT SAMPLED DUE TO INUNDATION

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: Peraquic Moisture Regime

(Circle)

Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Site occurs within an actively flowing river channel.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 8A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 8
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha angustifolia*	H	OBL	9.		
2. Lepidium latifolium	H	FACW	10.		
3. Aster chilensis	H	FAC	11.		
4. Unkn. grass	H		12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Site occurs on inboard slope of maintenance road
Species typical of uplands or transitions to wetlands are common

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: ___ (in.)

Depth to Free Water in Pit: ___ (in.)

Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ✓ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Unusually high flows previous winter occured in area of sample site resulting in sediment deposits; Historic and current aerial photos show presence of maintenance road

SOILS

Map Unit Name: Pacheco
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 3/2			Silty Clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: No hydric features observed; sample point on berm adjacent to maintenance road.

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Hydrophytes within vicinity of sample point are established at lower elevation than sample point. Hydrologic indicator (sediment deposits) present due to unusually high flows previous winter. Under normal flow years, site would not qualify as a wetland.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 803

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transcect ID: 8
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sparganium eurycarpum*	H	OBL	9.		
2.			10.		
3. Polygonum sp.	H		11.		
4. Unknown grass	H		12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: site occurs with topographic depression located between toe of slope for maintenance road and raised berm adjacent to channel.

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 15 (in.)

Depth to Saturated Soil: 8 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- ✓ Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- ✓ Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name: Pacheco
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	4	10YR 3/2	10YR 4/6	Numerous/Faint	Silty Clay

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- ✓ Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: Peraquic Moisture Regime

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Shallow depth to water table has allowed reduced soil conditions to develop and hydrophytes to establish.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number 8C

Project/Site: Lower Guadalupe River	Date: March 1997
Applicant/Owner: Santa Clara Valley Water District	County: Santa Clara
Investigator: Pat Boursier, Mary Bacca	State: California

Do Normal Circumstances exist on the site?	[✓ Yes] No	Community ID: River Bar
Is the site significantly disturbed (Atypical Situations?)	Yes [✓ No]	Transect ID: 8
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes [✓ No]	Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Aster chilensis *	H	FAC	9.		
2. Polygonum sp *	H		10.		
3. Scirpus californicus	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks: Hydrophytes present in vicinity of site are deep-rooted in order to access saturated conditions / water table located greater than 16" below surface

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____(in.)

Depth to Free Water in Pit: ____(in.)

Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ✓ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Unusually high flows previous winter has resulted in hydrologic indicators w/in vicinity of site = sediment deposits, algal mats, debris in vegetation

SOILS

Map Unit Name:
(Series and Phase) Pacheco

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 3/2	—	—	Silty Clay

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aquic Moisture Regime
Reducing Conditions
Gleyed or Low-Chrome colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: No hydric features observed

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Site is not a wetland due to the relatively deep water table: OHW mark of channel is >3' below site; Neither water table or saturated conditions were observed at maximum depth of pit (16")

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 8D

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date:
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 8
Plot ID: D

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus californicus*	H	OBL	9.		
2. Polygonum sp.*	H		10.		
3. Aster chilensis	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- ✓ Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- ✓ Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: Site at edge of bank above channel

SOILS

Map Unit Name: Pacheco
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 3/2	10YR 3/6	Numerous/Faint	Silty Clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
✓	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: Peraquic Moisture Regime

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Site occurs on edge of bank above channel - soils saturated from surface and support dominance of hydrophytes.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
9A

Project/Site: Lower Guadalupe River	Date: March 1997
Applicant/Owner: Santa Clara Valley Water District	County: Santa Clara
Investigator: Pat Boursier, Mary Bacca	State: California
Do Normal Circumstances exist on the site? [✓ Yes] No	Community ID: Ruderal
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]	Transect ID: 9
Is the area a potential Problem Area? Yes [✓ No] (If needed, explain on reverse.)	Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Aster chilensis*	H	FAC	9.		
2. Lepidium latifolium	H	FACW	10.		
3. Cynodon dactylon	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

✓ Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- Other

No Recorded Data Available

Field Observation:

Depth of Surface Water: ____(in.)

Depth to Free Water in Pit: ____(in.)

Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- ✓ Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: Unusually high flows previous winter occured in vicinity of site resulting in sediment deposits - wetland hydrology does not normally exist;

SOILS

Map Unit Name: Pacheco
(Series and Phase)
Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR3/2	—	—	Clay

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aquic Moisture Regime
☐ Reducing Conditions
☐ Gleyed or Low-Chrome colors

☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks: No hydric features observed; soil consists of fill material (Non-native soil, gravel)

(Circle)
Hydrophytic Vegetation Present? Yes [✓ No]
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Hydrologic features reported are due to unusually high flows previous winter - site normally does not support wetland hydrology

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number 9B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 9
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sparganium eurycarpum*	H	OBL	9.		
2.			10.		
3. Scirpus californicus	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 10 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

___ Inundated
✓ Saturated in Upper 12 inches
✓ Water Marks
___ Drift Lines
✓ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 in.
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name: Pacheco
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	3 10Y	10YR 3/6	Few / Distinct	Silty Clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
✓	Reducing Conditions		Listed on National Hydric Soils List
✓	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: Peraquic Moisture Regime

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Site occurs w/in topographic depression located between toe of slope for maintenance road and raised berm adjacent to channel.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 9C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: River bar
Transect ID: 9
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	T	FACW	9.		
2. Acer negundo	T	FACW	10.		
3. Scirpus californicus	H	OBL	11.		
4. Aster sp. *	H		12.		
5. Polygonum sp.	H		13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). __________

Remarks:

HYDROLOGY

______ Recorded Data (Describe in Remarks):
______ Stream, Lake, or Tide Gauge
______ Aerial Photographs
______ Other
______ No Recorded Data Available

Field Observation:

Depth of Surface Water: ______(in.)

Depth to Free Water in Pit: ______(in.)

Depth to Saturated Soil: ______(in.)

Wetland Hydrology Indicators:
Primary Indicators:
______ Inundated
______ Saturated in Upper 12 inches
______ Water Marks
______ Drift Lines
______ Sediment Deposits
______ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
______ Oxidized Root Channels in Upper 12 in.
______ Water-Stained Leaves
______ Local Soil Survey Data
______ FAC-Neutral Test
______ Other (Explain in Remarks)

Remarks: Debris lodged in vegetation due to unusually high Flows previous winter; wetland hydrology not present under normal rainfall years.

SOILS

Map Unit Name: Pacheco
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR3/2	—	—	clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chrome colors

___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

(Circle)
Hydrophytic Vegetation Present? Yes No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes No

Remarks: Site occurs on raised bench above channel; vegetation is beyond direct influence of water table. Site is not a wetland due to lack of hydric soils & wetland hydrology (under normal rainfall years)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 9D

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: March 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 9
Plot ID: D

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus californicus*	H	OBL	9.		
2. Polygonum sp.	H		10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

_______ Recorded Data (Describe in Remarks):
_______ Stream, Lake, or Tide Gauge
_______ Aerial Photographs
_______ Other
_______ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: >18 (in.)
Depth to Saturated Soil: 18 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_______ Inundated
_______ Saturated in Upper 12 inches
✓ Water Marks
_______ Drift Lines
✓ Sediment Deposits
_______ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
_______ Oxidized Root Channels in Upper 12 in.
_______ Water-Stained Leaves
_______ Local Soil Survey Data
_______ FAC-Neutral Test
_______ Other (Explain in Remarks)

Remarks: Site on edge of bank above channel

SOILS

Map Unit Name:
(Series and Phase) Pacheco
Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10	A	10YR 3/1	—	—	Silty Clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chrome colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 10A

Project/Site: Lower Guadalupe River	Date: May 1997
Applicant/Owner: Santa Clara Valley Water District	County: Santa Clara
Investigator: Pat Boursier, Mary Bacca	State: California

Do Normal Circumstances exist on the site?	[✓ Yes] No	Community ID: Ruderal
Is the site significantly disturbed (Atypical Situations?)	Yes [✓ No]	Transect ID: 10
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes [✓ No]	Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium*	H	FACW	9.		
2. Aster chilensis *	H	FAC	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Peppergrass and aster growing on sideslope of maintenance road

HYDROLOGY

_______ Recorded Data (Describe in Remarks):
_______ Stream, Lake, or Tide Gauge
_______ Aerial Photographs
_______ Other
_______ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

_______ Inundated
_______ Saturated in Upper 12 inches
_______ Water Marks
_______ Drift Lines
_______ Sediment Deposits
_______ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_______ Oxidized Root Channels in Upper 12 in.
_______ Water-Stained Leaves
_______ Local Soil Survey Data
_______ FAC-Neutral Test
_______ Other (Explain in Remarks)

Remarks: No hydrologic field characteristics observed except due to unusually high flows from previous winter (i.e. debris lodged in vegetation)

SOILS

Map Unit Name: Mocho
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR 4/2		—	Silty loam

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aquic Moisture Regime
____ Reducing Conditions
____ Gleyed or Low-Chrome colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks:

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point on side slope of maintenance road.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
10B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 10
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus acutus*	H	OBL	9.		
2. Sparganium eurycarpum	H	OBL	10.		
3. Leersia oryzodes*	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

Recorded Data (Describe in Remarks):
Stream, Lake, or Tide Gauge
Aerial Photographs
Other
No Recorded Data Available

Field Observation:

Depth of Surface Water: 6 (in.)
Depth to Free Water in Pit: 8 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
Inundated
✓ Saturated in Upper 12 inches
Water Marks
Drift Lines
Sediment Deposits
Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
Oxidized Root Channels in Upper 12 in.
Water-Stained Leaves
Local Soil Survey Data
FAC-Neutral Test
Other (Explain in Remarks)

Remarks: Sample point occurs within a sedimented-in side channel

SOILS

Map Unit Name: Mocho
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR 3/2	10 YR 3/6	Numerous/Distinct	Silt Loam

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- ✓ Reducing Conditions
- Gleyed or Low-Chrome colors

- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks: Peraquic moisture regime

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Side channel saturated to surface; inundated 6-8" in many areas. Dominated by obligate wetland species

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number

11A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 11
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium*	H	FACW	9.		
2. Xanthium strumarium	H	FAC+	10.		
3. Plantago major	H	FACW-	11.		
4. Polygonum monspeliensis	H	FACW+	12.		
5. Lolium multiflorum	H	FAC	13.		
6. Rumex crispus	H	FACW-	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: Only hydrologic features observed (ie. sediment deposits and debris lodged in vegetation) due to unusually high flows previous winter

SOILS

Map Unit Name: (Series and Phase) Pacheco

Taxonomy (Subgroup):

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8		10YR 3/2	—	—	clay loam (compacted)

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aquic Moisture Regime
Reducing Conditions
Gleyed or Low-Chrome colors
Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: No hydric features observed

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on gentle slope below eastern levee - mixture of hydrophytes present due to unusually high flows previous winter and compacted soils that slowed infiltration

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 11B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 11
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Scirpus acutus *	H	OBL	9.		
2. Typha angustifolia	H	OBL	10.		
3. Leersia oryzoides	H	OBL	11.		
4. Rumex crispus *	H	FACW	12.		
5. Scirpus californicus	H	OBL	13.		
6. Polygonum sp. *	H		14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
  ____ Stream, Lake, or Tide Gauge
  ____ Aerial Photographs
  ____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ____ Inundated
- ✓ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name:
(Series and Phase) Pacheco

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		10 YR 3/1	—	—	clay
>10		3/N	—	—	Clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
✓	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks: A sandy component (10YR 4/3) was present throughout the sampled depth

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point is adjacent to a side channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
12A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 12
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium*	H	FACW	9.		
2. Rumex crispus	H	FACW-	10.		
3. Aster chiliensis	H	FAC	11.		
4. Cyperus sp. *	H		12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

______ Recorded Data (Describe in Remarks):
- ______ Stream, Lake, or Tide Gauge
- ______ Aerial Photographs
- ______ Other

______ No Recorded Data Available

Field Observation:

Depth of Surface Water: ______(in.)

Depth to Free Water in Pit: ______(in.)

Depth to Saturated Soil: ______(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ______ Inundated
- ______ Saturated in Upper 12 inches
- ______ Water Marks
- ______ Drift Lines
- ______ Sediment Deposits
- ______ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ______ Oxidized Root Channels in Upper 12 in.
- ______ Water-Stained Leaves
- ______ Local Soil Survey Data
- ______ FAC-Neutral Test
- ______ Other (Explain in Remarks)

Remarks: No hydrologic features observed

SOILS

Map Unit Name: (Series and Phase) Mocho

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR 3/2	—	—	clay loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chrome colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No

Wetland Hydrology Present? Yes [✓ No]

Hydric Soils Present? Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on a raised berm at the edge of the maintenance road. Hydrophytes present due largely to unusually high flows previous winter – beyond influence of ordinary high water.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
12B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 12
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sparganium eurycarpum*	H	OBL	9.		
2. Scirpus californicus	H	OBL	10.		
3. Leersia oryzoides*	H	OBL	11.		
4. Xanthium strumarium	H	FAC+	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). ____

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: / (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
✓ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: Inundated conditions (1-2") approximately 2 feet from pit

SOILS

Map Unit Name:
(Series and Phase) Madro

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12		3/N	10YR 3/6	Numerous/Distinct	Silty Clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ✓ Aquic Moisture Regime
- ✓ Reducing Conditions
- ✓ Gleyed or Low-Chrome colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point within excavated flood control side channel that has silted-in and supports a dominance of obligate wetland plants.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 12C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1992
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: River Sandbar
Transect ID: 12
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Aster chiliensis *	H	FAC	9.		
2. Polygonum sp. *	H		10.		
3. Scirpus californicus	H	OBL	11.		
4. Raphanus sativus	H	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). ____

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____ (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Only evidence of hydrology (debris lodged in nearby willow trees) due to unusually high water flows previous winter.

SOILS

Map Unit Name: Mocho
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR 3/2	—	—	Fine sandy clay loam

Hydric Soil Indicators:

- Histosol
- Histic Epipedon
- Sulfidic Odor
- Aquic Moisture Regime
- Reducing Conditions
- Gleyed or Low-Chrome colors
- Concretions
- High Organic Content in Surface Layer in Sandy Soils
- Organic Streaking in Sandy Soils
- Listed on Local Hydric Soils List
- Listed on National Hydric Soils List
- Other (Explain in Remarks)

Remarks:

	(Circle)
Hydrophytic Vegetation Present?	[✓ Yes] No
Wetland Hydrology Present?	Yes [✓ No]
Hydric Soils Present?	Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on berm that is significantly higher than the water table (defined by ordinary high water mark of river).

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
13A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 13
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium*	H	FAC+	9.		
2. Rumex crispus	H	FACW-	10.		
3. Sparganium eurycarpum	H	OBL	11.		
4. Cyperus sp. *	H		12.		
5. Raphanus sativus	H	UPL	13.		
6. Aster chiliensis	H	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
_____ Other
_____ No Recorded Data Available

Field Observation:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: Only hydrology observed (debris lodged in vegetation) due to unusually high flows previous winter

SOILS

Map Unit Name:
(Series and Phase) Mocho

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12		10YR 3/2	—	—	Fine sandy clay loam

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks:

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point on raised berm west of maintenance road, beyond influence of ordinary high water.

SOILS

Map Unit Name:
(Series and Phase) Mocho

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-7		10YR 3/2	—	—	silty clay loam
7-14					loamy sand
>14		10YR 3/1	7.5YR 4/4	Numerous/Distinct	silty clay loam

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon	✓	High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime		Listed on Local Hydric Soils List
✓	Reducing Conditions		Listed on National Hydric Soils List
✓	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks:

	(Circle)	
Hydrophytic Vegetation Present?	[✓ Yes]	No
Wetland Hydrology Present?	[✓ Yes]	No
Hydric Soils Present?	[✓ Yes]	No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point within constructed flood control channel - influenced by water table (OHWM)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number

13B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: ______
Transect ID: ______
Plot ID: ______

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Leersia oryzoides	H	OBL	9.		
2. Xanthium strumarium*	H	FAC+	10.		
3. Typha angustifolia	H	OBL	11.		
4. Scirpus robustus	H	OBL	12.		
5. Scirpus acutus	H	OBL	13.		
6. Salix laevigata	S	FACW	14.		
7. Salix laevigata	T	FACW	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
_____ Other
_____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >16 (in.)

Depth to Saturated Soil: 14 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: Debris lodged in willow trees

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 13C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: Willow Riparian
Transect ID: 13
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium*	H	FACW	9.		
2. Foeniculum vulgare	H	FACU	10.		
3. Raphanus sativus	H	UPL	11.		
4. Aster chilensis	H	FAC	12.		
5. Salix laevigata	T	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >12 (in.)

Depth to Saturated Soil: >12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 in.
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: No hydrologic features observed

SOILS

Map Unit Name: Mocho
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12		10YR 3/2	—	—	Clay Loam

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aquic Moisture Regime
____ Reducing Conditions
____ Gleyed or Low-Chrome colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
____ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: No hydric soil indicators observed.

	(Circle)
Hydrophytic Vegetation Present?	[✓ Yes] No
Wetland Hydrology Present?	Yes [✓ No]
Hydric Soils Present?	Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on large river berm, greater than 10 ft. above excavated flood control channel.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 14A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 14
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lolium multiflorum*	H	FAC	9.		
2. Xanthium strumarium	|	FAC+	10.		
3. Rumex crispus	|	FACW-	11.		
4. Lepidium latifolium	|	FACW	12.		
5. Picris echioides	|	FAC	13.		
6. Melilotus indica	↓	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

_____ Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
_____ Other
_____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: ≥12 (in.)

Depth to Saturated Soil: ≥12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: No hydrologic indicators observed.

SOILS

Map Unit Name:
(Series and Phase) Mocho

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10"		10YR 3/2	—	—	Clay Loam

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aquic Moisture Regime
Reducing Conditions
Gleyed or Low-Chrome colors

Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: No hydric soil features observed.

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on berm adjacent to maintenance road.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number

14B

Project/Site: Lower Guadalupe River	Date: May 1997
Applicant/Owner: Santa Clara Valley Water District	County: Santa Clara
Investigator: Pat Boursier, Mary Bacca	State: California

Do Normal Circumstances exist on the site?	[✓ Yes]	No	Community ID: Freshwater Marsh
Is the site significantly disturbed (Atypical Situations?)	Yes	[✓ No]	Transect ID: 14
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	[✓ No]	Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha angustifolia*	H	OBL	9.		
2. Ludwigea peploides	↓	OBL	10.		
3. Xanthium strumarium	↓	FAC+	11.		
4. Paspalum distichum	↓	OBL	12.		
5. Veronica sp.	↓		13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 17 (in.)

Depth to Saturated Soil: 3 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ✓ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Sample point within meandering minor channel within the overflow channel

SOILS

Map Unit Name: (Series and Phase) Mocho

Taxonomy (Subgroup):

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		3/10Y	10YR 4/4	Numerous/Distinct	Fine Sandy Loam
6-14		3/N	—	—	Silty clay
>14		—	—	—	Gravelly Loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
✓ Sulfidic Odor
___ Aquic Moisture Regime
✓ Reducing Conditions
✓ Gleyed or Low-Chrome colors

___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point within consructed low-Flow channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
14C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Willow - Riparian
Transect ID: 14
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium*	H	FAC+	9.		
2. Sparganium eurycarpum	H	OBL	10.		
3. Cyperus sp.	H	FACW	11.		
4. Populus Fremontii	S	FACW	12.		
5. Salix laevigata	S		13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: >12 (in.)

Depth to Saturated Soil: >12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Sample point on slope of berm within channel

SOILS

Map Unit Name: Mocho
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		10Y 3/2	—	—	clay
≥6		″	—	—	Fine Sandy Loam

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aquic Moisture Regime
☐ Reducing Conditions
☐ Gleyed or Low-Chrome colors

☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
☐ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks: No hydric soil features observed.

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point on raised berm within channel. Sediment deposits observed were a result of unusually high flows - site not a wetland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number 15 A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 15
Plot ID: A

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Raphanus sativus	H	UPL	9.		
2. Rumex crispus		FACW-	10.		
3. Scirpus californicus		OBL	11.		
4. Equisetum sp.			12.		
5. Xanthium strumarium *		FAC+	13.		
6. Polygonum sp.			14.		
7. Aster chilensis *		FAC	15.		
8. Lepidium latifolium		FACW	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____ (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: No hydrologic indicators observed except for debris from unusually high flows

SOILS

Map Unit Name:
(Series and Phase) Cropley

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0 - >16		10YR 3/2	—	—	Silty clay loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chrome colors

___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: No hydric soil features observed.

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point at base of slope for maintenance road

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
15B

Project/Site: Lower Guadalupe River	Date: May 1997
Applicant/Owner: Santa Clara Valley Water District	County: Santa Clara
Investigator: Pat Boursier, Mary Bacca	State: California

Do Normal Circumstances exist on the site?	[✓ Yes] No	Community ID: Freshwater Marsh
Is the site significantly disturbed (Atypical Situations?)	Yes [✓ No]	Transect ID: ____
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes [✓ No]	Plot ID: ____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium*	H	FAC+	9.		
2. Equisetum sp.			10.		
3. Rumex crispus		FACW-	11.		
4. Raphanus sativus		UPL	12.		
5. Scirpus californicus		OBL	13.		
6. Bromus diandrus		UPL	14.		
7. Aster chilensis	↓	FAC	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
____ Stream, Lake, or Tide Gauge	Primary Indicators:
____ Aerial Photographs	____ Inundated
____ Other	✓ Saturated in Upper 12 inches
____ No Recorded Data Available	____ Water Marks
	____ Drift Lines
Field Observation:	____ Sediment Deposits
	____ Drainage Patterns in Wetlands
Depth of Surface Water: 0 (in.)	
Depth to Free Water in Pit: ≥16 (in.)	Secondary Indicators (2 or more required):
Depth to Saturated Soil: 12 (in.)	____ Oxidized Root Channels in Upper 12 in.
	____ Water-Stained Leaves
	____ Local Soil Survey Data
	____ FAC-Neutral Test
	____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name:
(Series and Phase) Cropley

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8		10YR 3/2	10YR 4/4	Few / Faint	Silty Clay Loam

Hydric Soil Indicators:

____ Histosol
____ Histic Epipedon
____ Sulfidic Odor
____ Aquic Moisture Regime
✓ Reducing Conditions
____ Gleyed or Low-Chrome colors

____ Concretions
____ High Organic Content in Surface Layer in Sandy Soils
____ Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
____ Listed on National Hydric Soils List
____ Other (Explain in Remarks)

Remarks: 0-8" Fine sand layer

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point within a depressional area between channel berm and sloping uplands to east.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
15C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 15
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium*	H	FAC+	9.		
2. Raphanus sativus*	H	UPL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 50%

Remarks:

HYDROLOGY

_______ Recorded Data (Describe in Remarks):
_______ Stream, Lake, or Tide Gauge
_______ Aerial Photographs
_______ Other
_______ No Recorded Data Available

Field Observation:

Depth of Surface Water: _______(in.)

Depth to Free Water in Pit: _______(in.)

Depth to Saturated Soil: _______(in.)

Wetland Hydrology Indicators:

Primary Indicators:

_______ Inundated
_______ Saturated in Upper 12 inches
_______ Water Marks
_______ Drift Lines
_______ Sediment Deposits
_______ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_______ Oxidized Root Channels in Upper 12 in.
_______ Water-Stained Leaves
_______ Local Soil Survey Data
_______ FAC-Neutral Test
_______ Other (Explain in Remarks)

Remarks: No hydrologic indicators observed

SOILS

Map Unit Name:
(Series and Phase) Cropley

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR 3/2	—	—	Clay Loam

Hydric Soil Indicators:

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chrome colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☑ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Remarks: No hydric soil features observed

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point on raised berm within channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
15D

Project/Site: Lower Guadalupe River Applicant/Owner: Santa Clara Valley Water District Investigator: Pat Boursier, Mary Bacca	Date: County: Santa Clara State: California
Do Normal Circumstances exist on the site? [✓ Yes] No Is the site significantly disturbed (Atypical Situations?) Yes [✓ No] Is the area a potential Problem Area? Yes [✓ No] (If needed, explain on reverse.)	Community ID: Freshwater Marsh Transect ID: 15 Plot ID: D

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sparganium eurycarpum*	H	OBL	9.		
2. Leersia oryzoides*		OBL	10.		
3. Xanthium strumarium		FAC+	11.		
4. Cyperus sp.			12.		
5. Polypogon sp.			13.		
6. Bromus diandrus		UPL	14.		
7. Veronica sp.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 3 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
✓ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sample point ~ 5 feet from main river channel

SOILS

Map Unit Name:
(Series and Phase) Cropley

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-16		—	—	—	Gravelly sand
>16		—	—	—	Rocks

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
✓ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chrome colors

___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point located on low river terrace ~5 ft. from main channel.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 16 A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 16
Plot ID: A

VEGETATION

	Dominant Plant Species	Stratum	Indicator		Dominant Plant Species	Stratum	Indicator
1.	Xanthium strumarium*	H	FAC+	9.			
2.	Rumex crispus	↓	FACW-	10.			
3.	Conium maculatum	↓	FACW	11.			
4.	Raphanus sativus	↓	UPL	12.			
5.	Equisetum sp.	↓		13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

_______ Recorded Data (Describe in Remarks):
_______ Stream, Lake, or Tide Gauge
_______ Aerial Photographs
_______ Other
_______ No Recorded Data Available

Field Observation:

Depth of Surface Water: _______(in.)

Depth to Free Water in Pit: _______(in.)

Depth to Saturated Soil: _______(in.)

Wetland Hydrology Indicators:

Primary Indicators:

_______ Inundated
_______ Saturated in Upper 12 inches
_______ Water Marks
_______ Drift Lines
_______ Sediment Deposits
_______ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_______ Oxidized Root Channels in Upper 12 in.
_______ Water-Stained Leaves
_______ Local Soil Survey Data
_______ FAC-Neutral Test
_______ Other (Explain in Remarks)

Remarks: No hydrologic features observed

SOILS

Map Unit Name:
(Series and Phase) Pacheco

Drainage Class:

Field Observations

Confirm Mapped Type? Yes [✓ No]

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR 3/2	—	—	fine Sandy clay loam

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aquic Moisture Regime
☐ Reducing Conditions
☐ Gleyed or Low-Chrome colors
☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks: No hydric soil features observed

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? Yes [✓ No]
Hydric Soils Present? Yes [✓ ~~No~~]

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks: Sample point occurs on upper bank of river.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 16B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 16
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sparganium eurycarpum	H	OBL	9.		
2. Scirpus californicus		OBL	10.		
3. Rumex crispus		FACW-	11.		
4. Lepidium latifolium		FACW	12.		
5. Leersia oryzoides *		OBL	13.		
6. Veronica sp.	↓		14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____(in.)

Depth to Free Water in Pit: ____(in.)

Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
✓ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name: Pachero
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12		10 YR 3/1	7.5 YR 3/4	Numerous/Distinct	

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
✓	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks:

(Circle)

Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks: Sample point occurs within a depressional area adjacent to main channel

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number: 16C

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: ruderal
Transect ID: 16
Plot ID: C

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium*	H	FAC+	9.		
2. Raphanus sativus	↓	UPL	10.		
3. Aster chilensis	↓	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: >16 (in.)
Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: No hydrologic features observed.

SOILS

Map Unit Name: Pacheco
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-8	—	—	—	—	Fine Sand
78		10YR 3/2	—	—	Fine Sandy Loam

Hydric Soil Indicators:

☐ Histosol
☐ Histic Epipedon
☐ Sulfidic Odor
☐ Aquic Moisture Regime
☐ Reducing Conditions
☐ Gleyed or Low-Chrome colors

☐ Concretions
☐ High Organic Content in Surface Layer in Sandy Soils
☐ Organic Streaking in Sandy Soils
☑ Listed on Local Hydric Soils List
☐ Listed on National Hydric Soils List
☐ Other (Explain in Remarks)

Remarks:

	(Circle)
Hydrophytic Vegetation Present?	[✓ Yes] No
Wetland Hydrology Present?	Yes [✓ No]
Hydric Soils Present?	Yes [✓ No]

(Circle)

Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample Point located on berm

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number 16 D

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date:
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Mar
Transect ID: 16
Plot ID: D

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sparganium eurycarpum*	H	OBL	9.		
2. Polygonum sp.	↓		10.		
3. Xanthium strumarium	↓	FAC+	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
___ Inundated
✓ Saturated in Upper 12 inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 in.
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name:
(Series and Phase) Pacheco

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		3/10Y			clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
✓	Sulfidic Odor		Organic Streaking in Sandy Soils
✓	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
✓	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks:

(Circle)
Hydrophytic Vegetation Present? [✓ Yes] No
Wetland Hydrology Present? [✓ Yes] No
Hydric Soils Present? [✓ Yes] No

(Circle)
Is this Sampling Point Within a Wetland? [✓ Yes] No

Remarks:
On low terrace adjacent to river.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number 17A

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Ruderal
Transect ID: 17
Plot ID: 4

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium*	H	FACW	9.		
2. Foeniculum vulgare		FACU	10.		
3. Aster chilensis		FAC	11.		
4. Bromus diandrus		NI-	12.		
5. Rumex crispus		FACW-	13.		
6. Cyperus sp.			14.		
7. Picris echioides		FAC	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: ____(in.)

Depth to Free Water in Pit: ____(in.)

Depth to Saturated Soil: ____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks: No hydrologic features observed

SOILS

Map Unit Name:
(Series and Phase) Pacheco

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
10		10YR 3/2	—	—	clay loam

Hydric Soil Indicators:

Histosol
Histic Epipedon
Sulfidic Odor
Aquic Moisture Regime
Reducing Conditions
Gleyed or Low-Chrome colors
Concretions
High Organic Content in Surface Layer in Sandy Soils
Organic Streaking in Sandy Soils
✓ Listed on Local Hydric Soils List
Listed on National Hydric Soils List
Other (Explain in Remarks)

Remarks: Soil is compacted.

	(Circle)
Hydrophytic Vegetation Present?	~~Yes~~ No
Wetland Hydrology Present?	Yes [✓ No]
Hydric Soils Present?	Yes [✓ No]

(Circle)
Is this Sampling Point Within a Wetland? Yes [✓ No]

Remarks: Sample point occurs on toe of levee slope.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number 17B

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: Pat Boursier, Mary Bacca

Date: May 1997
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [✓ Yes] No
Is the site significantly disturbed (Atypical Situations?) Yes [✓ No]
Is the area a potential Problem Area? Yes [✓ No]
(If needed, explain on reverse.)

Community ID: Freshwater Marsh
Transect ID: 17
Plot ID: B

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sparganium eurycarpum	H	OBL	9.		
2. Scirpus californicus		OBL	10.		
3. Rumex crispus		FACW	11.		
4. Lepidium latifolium		FACW	12.		
5. Leersia oryzoides*		OBL	13.		
6. Veronica sp.			14.		
7. Cyperus sp.			15.		
8. Aster chilensis*		FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observation:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 8 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

____ Inundated
✓ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
✓ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

____ Oxidized Root Channels in Upper 12 in.
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name:
(Series and Phase) Pacheco

Taxonomy (Subgroup):

Drainage Class:
Field Observations
Confirm Mapped Type? Yes [✓ No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10		2.5Y 4/2	10YR 4/6	Numerous/Distinct	Fine sandy clay loam
>10		2.5Y 3/2	—	—	clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon	✓	High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime	✓	Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chrome colors		Other (Explain in Remarks)

Remarks:

	(Circle)
Hydrophytic Vegetation Present?	[✓ Yes] No
Wetland Hydrology Present?	[✓ Yes] No
Hydric Soils Present?	[✓ Yes] No

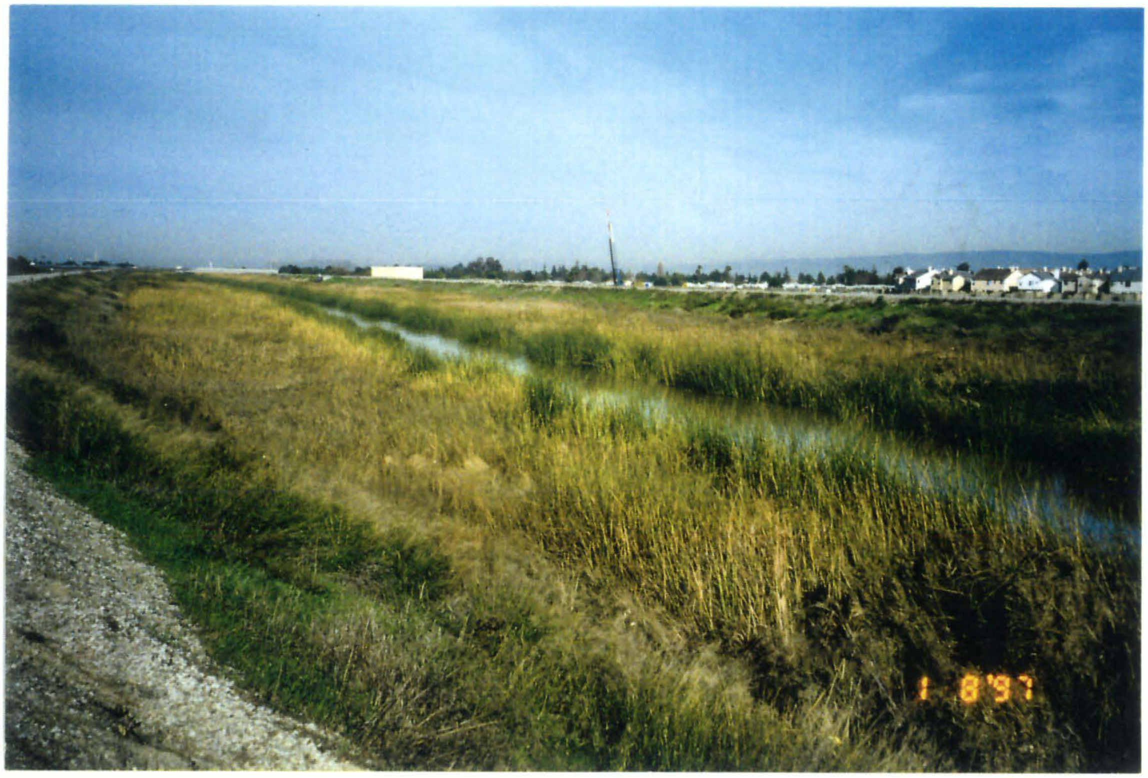
(Circle)

Is this Sampling Point Within a Wetland? [✓ Yes] No

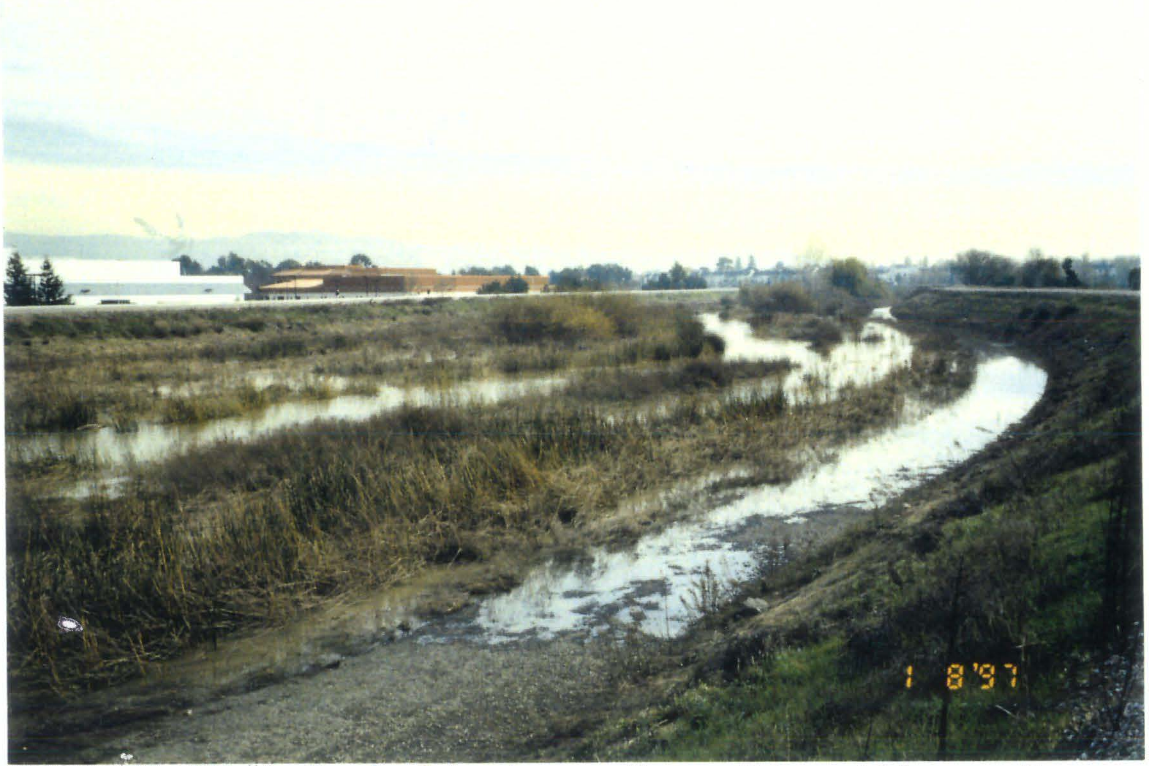
Remarks:
Sample Point located on low bank adjacent to main channel (~15' away from channel)

APPENDIX D

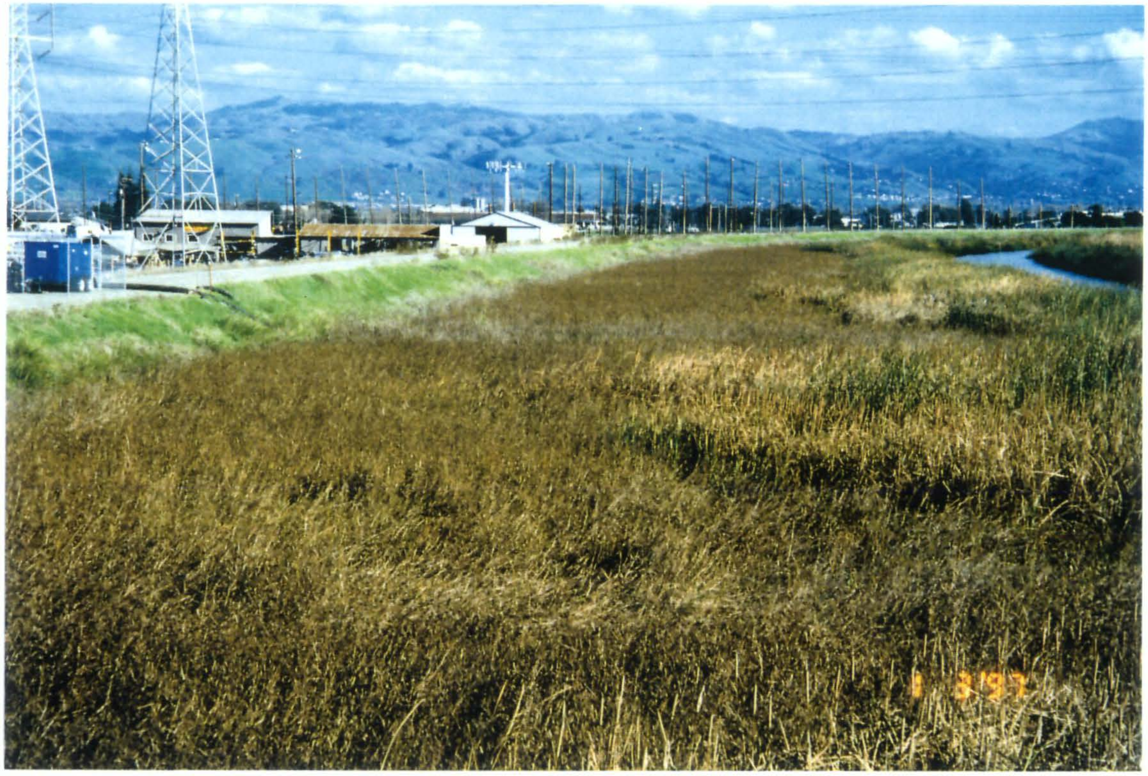
PHOTOGRAPHS OF THE LOWER GUADALUPE RIVER PROJECT SITE



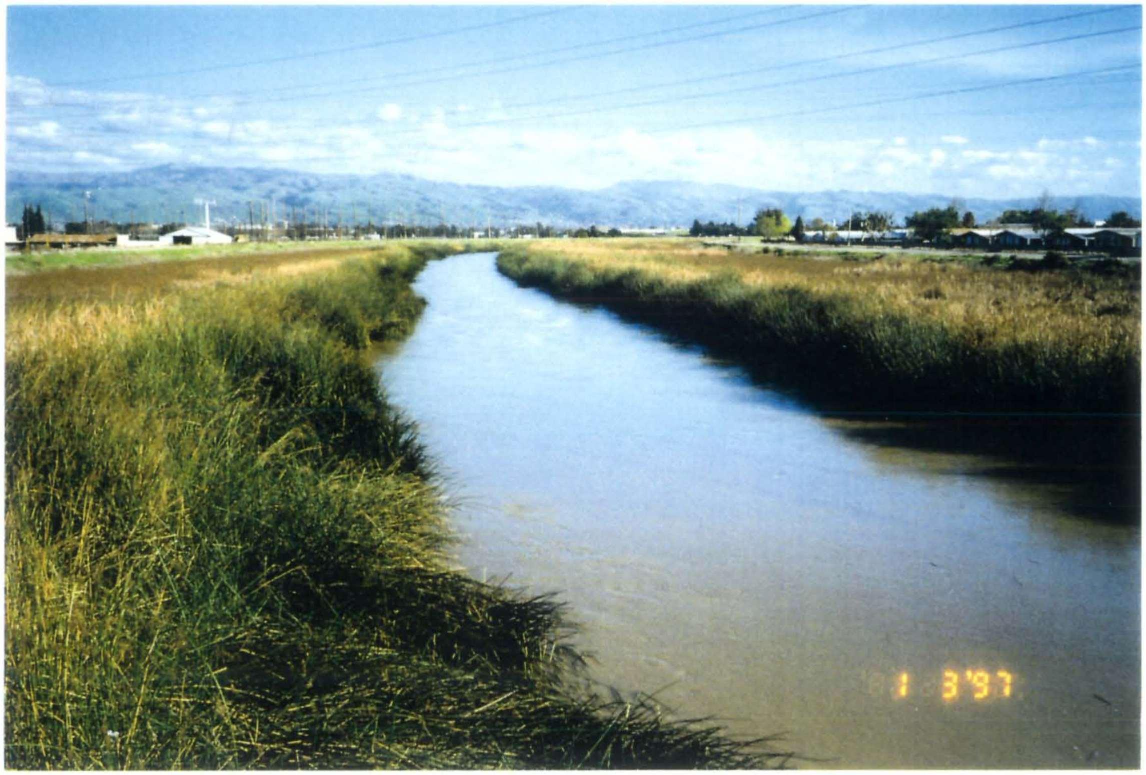
PHOTOGRAPH #3: Reach of river between Highway 237 and Tasman Drive that is dominated by California bulrush and narrow-leaved cattail. View looking downstream.



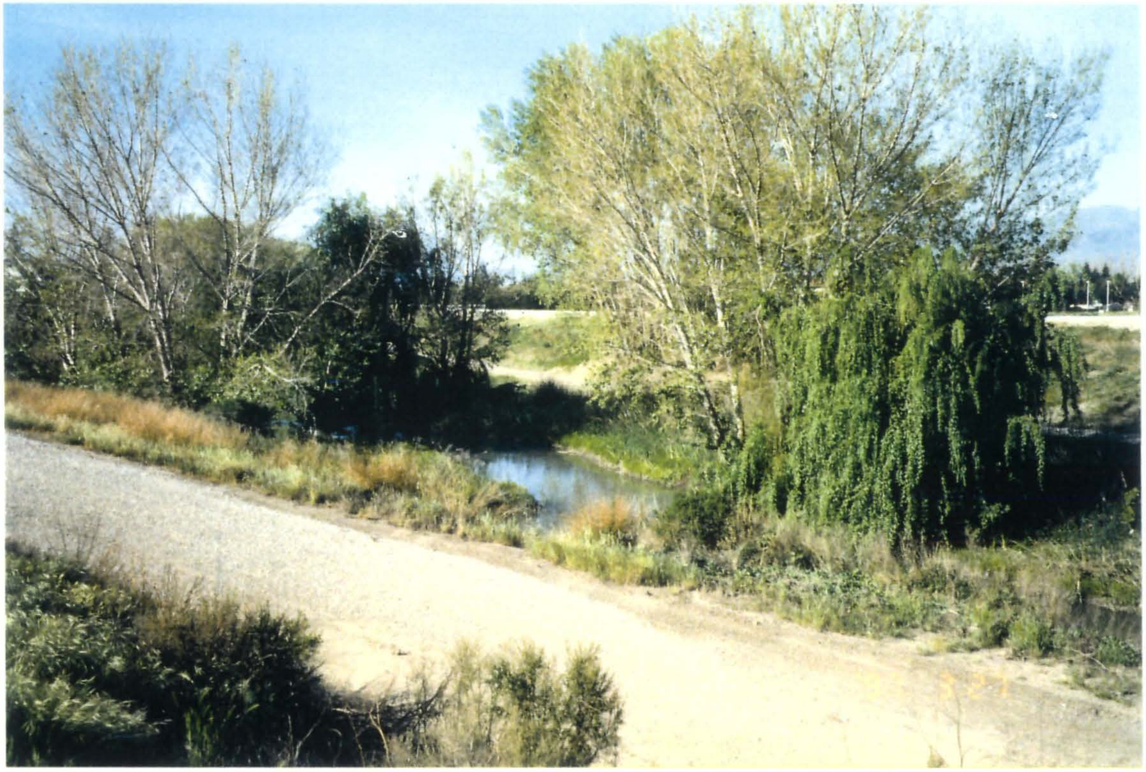
PHOTOGRAPH #4: Reach of river between Tasman Drive and Montague Expressway showing braided river channel; Note photo taken following unusually high rainfall events.



PHOTOGRAPH #1: Example of upper bank of river dominated by alkali bulrush. View looking upstream from the Gold Street Bridge crossing.



PHOTOGRAPH #2: Example of lower bank of river dominated by California bulrush. View looking upstream from the Gold Street bridge crossing.



PHOTOGRAPH #5: Example of riparian habitat along river banks between Montague Expressway and Trimble Road.